

# **2011 NAIP Survey: Summary Report**

**USDA  
Farm Service Agency  
Aerial Photography Field Office  
Salt Lake City, UT 84119**

**June 2012**

## Table of Contents

	Page No.
<b>Section 1 – Executive Summary</b>	<b>4</b>
<b>Section 2 – Overview</b>	<b>6</b>
<b>Section 3 – Summary of Survey Results</b>	<b>8</b>
<b>Section 4 – Comparing 2006- 2011 Survey Results</b>	<b>37</b>
<b>Section 5 – Recommendations for NAIP Based on Survey Results</b>	<b>46</b>
<b>Section 6 – Recommendations for Changes to Survey for 2012</b>	<b>47</b>
<b>Appendix A – Alternative Uses of NAIP</b>	<b>48</b>
<b>Appendix B – Recommendations to Improve NAIP</b>	<b>49</b>
<b>Appendix C – Summaries of Open-Ended Questions</b>	<b>50</b>
<b>Appendix D – Questions Omitted or Changed From the 2010 Survey</b>	<b>51</b>

### Maps, Charts, and Tables

<i>Map 1 – Completed Surveys</i>	7
<i>Map 2 – Did You Use NAIP Imagery When Creating Maps?</i>	14
<i>Map 3 – Did You Use the 2011 NAIP Imagery in Any Appeal Adjudications?</i>	16
<i>Map 4 – Month Notified that NAIP Was Available</i>	18
<i>Map 5 – Ideal Acquisition Date – Month</i>	20
<i>Map 6 – Ideal Flying Season Start – Month</i>	22
<i>Map 7 – Ideal Flying Season End – Month</i>	22
<i>Map 8 – Typical Growing Seasons</i>	24
<i>Map 9 – Image Quality Lightness/Darkness</i>	25
<i>Map 10 – Image Quality Contrast</i>	26
<i>Map 11 – Image Quality Color</i>	27
<i>Map 12 – Overall Satisfaction</i>	29
<i>Map 13 – Did the CLU need to be edited?</i>	30
<i>Map 14 – Awareness of Seamline Data Layer</i>	32
<i>Map 15 – Aware that 4-Band NAIP Enables Viewing of Natural Color &amp; CIR</i>	33
<i>Map 16 – Was The 4-Band Imagery Useful?</i>	35
<i>Chart 1 – Question 2</i>	8
<i>Chart 2 – Question 4</i>	9
<i>Chart 3 – Question 7</i>	10
<i>Chart 4 – Question 7</i>	11
<i>Chart 5 – Question 8</i>	11
<i>Chart 6 – Question 8</i>	12
<i>Chart 7 – Question 9</i>	12
<i>Chart 8 – Question 9</i>	13
<i>Charts 9 – Question 10</i>	13
<i>Chart 10 – Question 12</i>	15
<i>Chart 11 – Question 14</i>	17
<i>Chart 12 – Question 14</i>	17
<i>Chart 13 – Question 15</i>	19
<i>Chart 14 – Question 15</i>	19
<i>Chart 15 – Question 16</i>	21
<i>Chart 16 – Question 16</i>	21
<i>Chart 17 – Question 17</i>	23
<i>Chart 18 – Question 18</i>	25
<i>Chart 19 – Question 19</i>	26
<i>Chart 20 – Question 20</i>	27
<i>Chart 21 – Question 21</i>	28
<i>Chart 22 – Question 22</i>	30
<i>Chart 23 – Question 23</i>	31
<i>Chart 24 – Question 24</i>	33
<i>Chart 25 – Question 25</i>	34
<i>Chart 26 – Question 26</i>	36
<i>Chart 27 – Question 27</i>	38
<i>Chart 28 – Comparison of Question 16 over 6 years</i>	39
<i>Chart 29 – Comparison of Question 16 over 6 years</i>	39
<i>Chart 30 – Comparison of Question 16 over 6 years</i>	40
<i>Chart 31 – Comparison of Question 16 over 6 years</i>	40

<i>Chart 32 - Comparison of Question 16 over 6 years</i>	40
<i>Chart 33 - Comparison of Question 16 over 6 years</i>	41
<i>Chart 34 - Comparison of Harvest Times</i>	41
<i>Chart 35 - Question 18 Comparison</i>	42
<i>Chart 36 - Question 19 Comparison</i>	43
<i>Chart 37 - Question 20 Comparison</i>	43
<i>Chart 38 - Question 21 Comparison</i>	44
<i>Chart 39 - Question 26 Comparison</i>	45
<i>Table 1 - NAIP Receive Date</i>	38
<i>Table 2 - Ideal Collection Date</i>	38

## Section 1 – Executive Summary

The 2011 National Agriculture Imagery Program (NAIP) Survey was initiated as a means to assess the NAIP imagery based on feedback from the Farm Service Agency's (FSA) primary customers, the FSA State and County Offices. Per Notice AP-16, the 2011 NAIP Survey was distributed through a web-based medium to each FSA County Service Center via the State Geographic Information System (GIS) Specialists/Coordinators. Each State and County Office receiving 2011 NAIP imagery (AL, CO, DE, IA, ID, IL, MD, ME, MT, NH, NM, NY, OH, OR, SC, UT, VA, VT, WA, and WV) was directed to complete the survey.

The survey:

- establishes a standardized feedback mechanism for NAIP acquisition and delivery.
- allows for adjustment of program strategy as necessary based on survey analysis.
- will allow for analysis of previous, current, and future year feedback to ensure continued program improvement and development.

NAIP imagery is used millions of times in generating maps to assist with FSA programs. The following is a brief summary of survey responses:

Total Survey Responses = 1,098 (1,002 completed all portions of the survey, 91%). A number of counties do not have service centers or were scheduled to close their service center. Excluding these counties the overall participation rate was 98%. Of the 20 states that received NAIP in 2011, 17 had 100% county office participation in the survey. The 3 remaining states had county participation in the survey of 78%, 91%, and 98%. Overall there was very high participation in the survey by the county and state offices.

Note: The first three bullets below represent percentages that were calculated with the response of "N/A" and "Neither" removed so that only respondents that had an opinion or were familiar with certain farm programs were accounted for.

- 75% of respondents were either very satisfied or satisfied with 2011 NAIP delivery time in regards to various farm program usage.
- 78% of respondents were either very satisfied or satisfied with the date the imagery was flown in regards to various farm program usage.
- 81% of respondents were either very satisfied or satisfied with the overall quality of the imagery in regards to farm program usage.
- 87% of respondents were either very satisfied or satisfied with the acquisition and delivery of the 2011 NAIP imagery.
- NAIP imagery is used millions of times in generating maps to assist with FSA programs.

The following general conclusions may be drawn:

1. The overall satisfaction of the NAIP imagery remains high. However, there is always room for program improvement.
2. Issues with the transition in the state and county FSA offices from accessing the NAIP imagery from desktop or local server image storage to a thin client system has affected the perception of NAIP. Even though this delivery mechanism for the NAIP imagery has

little or nothing to do with the actual image quality and timeliness it did generate many comments in the NAIP survey.

3. As was the case last year, a large percentage of the users of NAIP imagery and related data are not aware of the availability of the seamline shapefile and that 4-band imagery or the potential uses of this data. Charts and graphs regarding these two subjects can be found on pages 32 – 33. Additional training or notices may be needed.

## Section 2 - Overview

In 2011, FSA completed the 10th year of the NAIP program. The USDA-FSA Aerial Photography Field Office (APFO) is responsible for the acquisition, data ingestion, quality assessment, data delivery, and archiving of the NAIP imagery. FSA continues to adjust and modify NAIP processes to keep pace with technological advances in geospatial data acquisition and delivery as well as to meet the needs of FSA Service Centers and State Offices, their primary NAIP customers.

Feedback from NAIP users is vital for program improvement. To facilitate this, APFO prepared a survey for FSA State and County Office response. This is the seventh year of the NAIP survey, with several changes from previous surveys. Some questions were eliminated or modified, and new questions were created. A great deal of the 2011 survey focuses on NAIP imagery in relation to FSA farm program usage. The 2005 NAIP Survey was administered using email and spreadsheets, whereas the 2006 through 2011 NAIP surveys were completed utilizing a web survey engine. This helped alleviate human error in survey scoring and analysis for most responses.

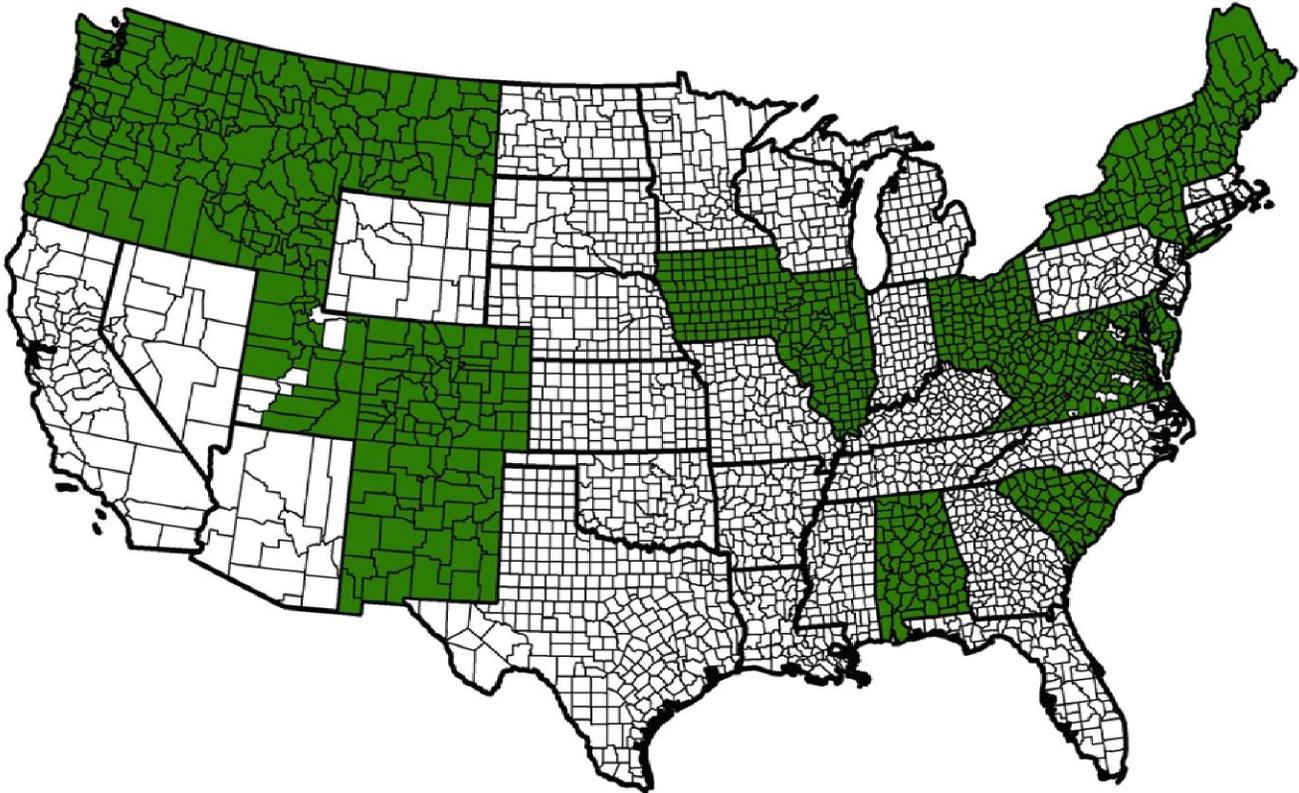
Per AP-16, FSA State Offices were to take one survey per State Office, and County Service Centers were to take one survey per county administered. This instruction was not always adhered to and in some cases there were multiple responses for a single County. As a result based on analysis of the data, multiple responses from the same County can slightly skew the survey results. The number of counties with multiple responses is not large, so the survey results should not be affected significantly.

Surveys were taken over a 33-day period, between January 23 and February 24, 2012.

The format of the survey varied to include the following types of questions: multiple choice, open ended, select all that apply, and numerically rated. After the close of the survey, responses were downloaded from the survey website in a variety of formats, including a survey summary, raw answers, and parsed answers as needed. While analysis of survey returns could be performed endlessly, it is understood that the results herein only scratch the surface of potential analysis.

APFO hopes to keep the current survey format stable for future years, streamlining questions and tightening user inputs as necessary. This will allow for a quality comparison of past and future survey results, enhancing feedback for program improvement.

## 2011 Completed Surveys



*Map 1 – Completed Surveys*

The graphic above depicts the 2011 NAIP Surveys that were completed via the web survey engine as of the closing date of the survey. Identification of counties that completed the survey was based on answers to question #5: “What is your 5-digit state and county FIPS code?” Counties in green responded to the question by selecting a FIPS code from a drop down menu. Most states had 100% completion, with an overall total of 98.4% of the counties with service centers having responded to the survey.

### Section 3 – Summary of Survey Results

The following section is a statistical breakdown of the survey on a question by question basis. At the end of this section there are a few examples of additional analysis, performed by comparing responses to multiple questions.

**Question 1.** Name: 46% of respondents answered this question, responses varied. This question was optional.

**Question 2.** Position:

Respondents were asked to identify their current position from a drop down menu. If the position was not listed, “other” could be chosen and the position manually entered. A summary of “other” positions can be found in Appendix C.

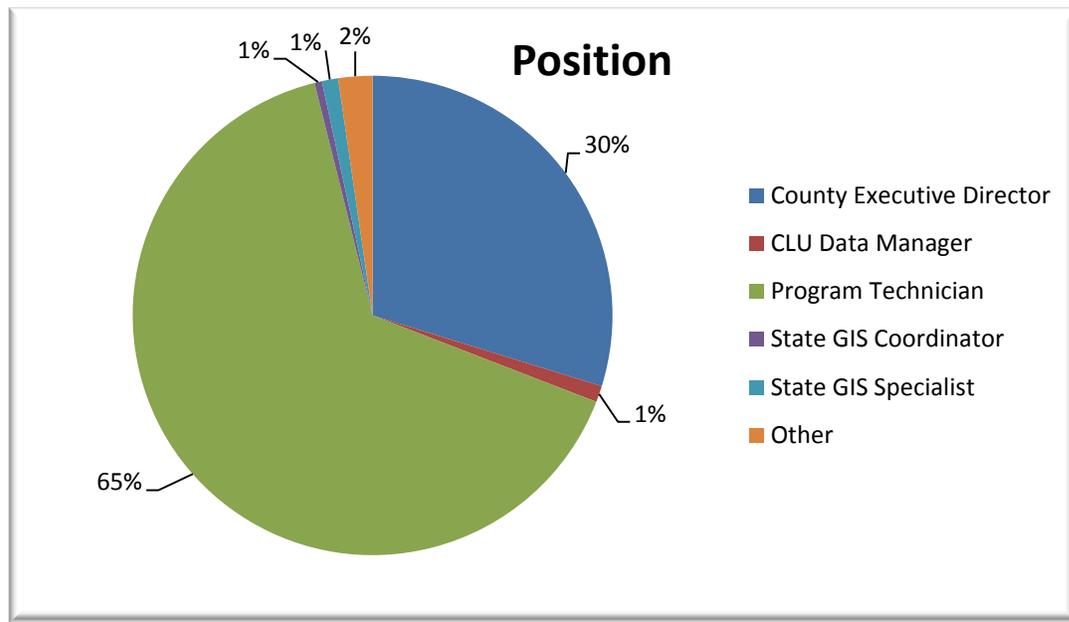


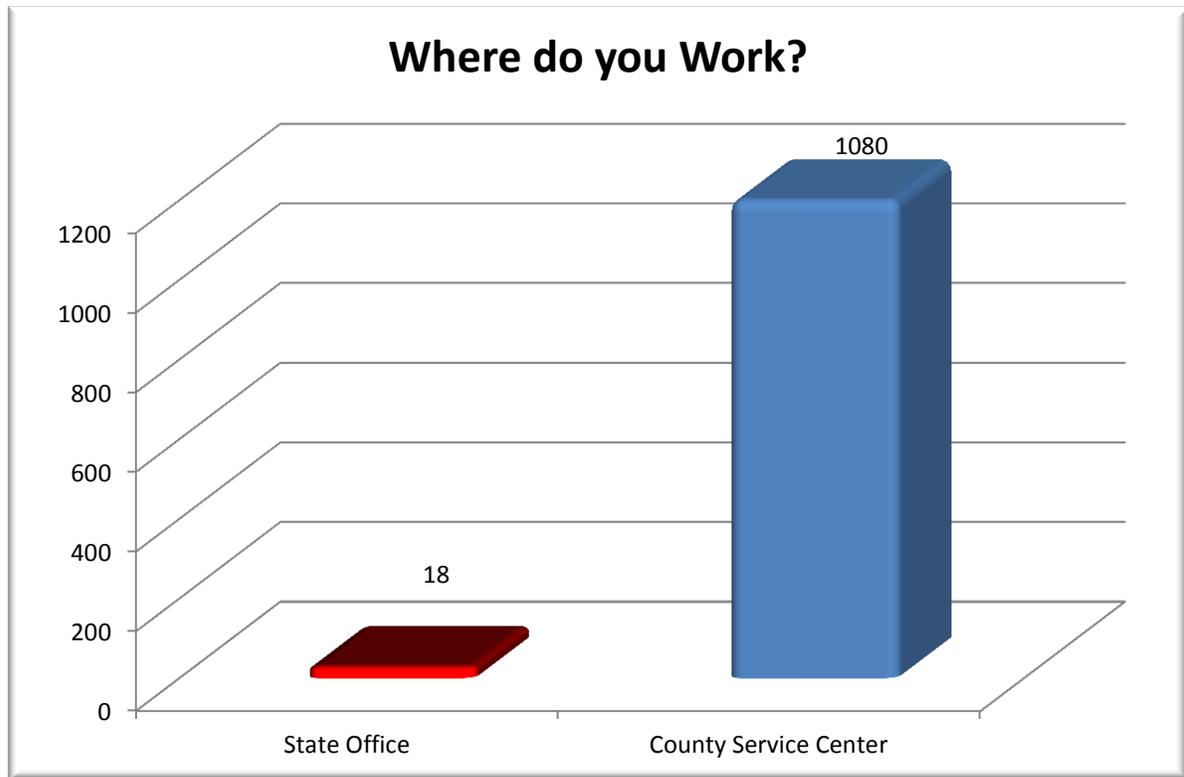
Chart 1 – Question 2

**Question 3.** Today's Date:

Responses ranged between Jan 23<sup>rd</sup> and Feb 24<sup>th</sup>, 2011. January 24<sup>th</sup> was the date with the most participation (the survey was taken 234 times on this date; 21% of all responses).

**Question 4.** Where do you work?

Options were “State Office” or “County Service Center”.



*Chart 2 – Question 4*

**Question 5.** What is your 5-digit State and County FIPS Code?

Responses varied. The FIPS code was selected from a pull down list. Only data for the 20 states that received 2011 NAIP imagery was shown. This was done so that the survey taker did not have to scroll through such a large list and to ensure greater accuracy. In previous surveys FIPS codes for states that were not flown that year were sometimes selected.

**Question 6.** What is your 2-digit State FIPS Code?

Responses varied.

Survey questions 7, 8, and 9 deal with NAIP user satisfaction in relation to various FSA farm programs. The programs/uses addressed in the 2011 survey are: compliance, TERRA (Tool for Environmental Resource Results Assessment), CRP (Conservation Reserve Program) administration, BCAP (Biomass Crop Assistance Program), CLU (Common Land Unit) maintenance tool, grain bin tool, farm loans, FSA map series tool, acreage reporting, and an

option to choose other for uses that were not listed. These programs/uses were included in the survey based upon input from FSA state GIS specialists and other FSA employees. Possible choices for questions 7, 8, and 9 were as follows:

- Very Satisfied
- Satisfied
- Neither
- Unsatisfied
- Very Unsatisfied
- N/A or Not Sure

Respondents were encouraged to select all programs that applied. Charts 3 – 8 display the number of responses or percentage for each of the categories. The blue columns represent the combined responses of “Very Satisfied” and “Satisfied” and the red columns represent the combined responses of “Unsatisfied” and “Very Unsatisfied”. Responses of Neither and N/A were not counted towards the percentage results since they do not express an opinion.

**Question 7.** With regards to using NAIP imagery for the following programs, how satisfied are you with the date you were first notified that the 2011 NAIP imagery was available? (check all that apply).

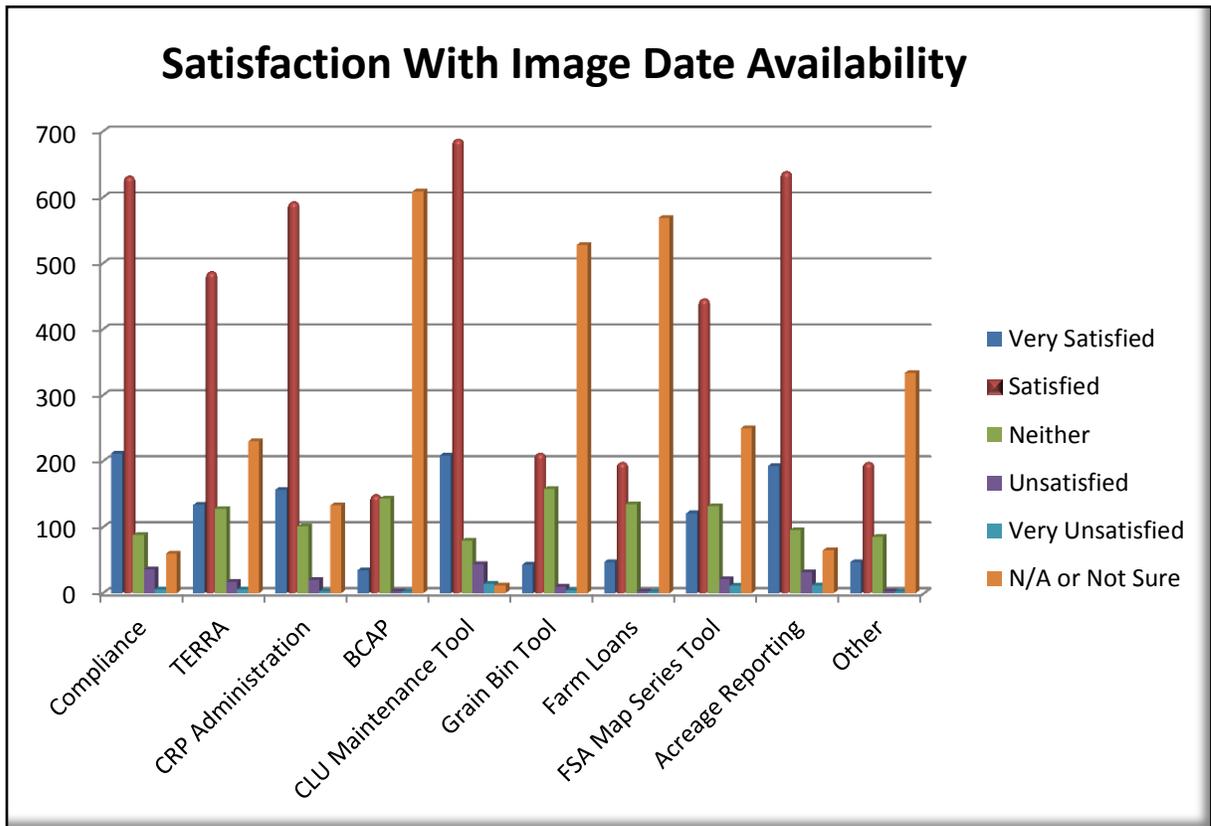


Chart 3 – Question 7

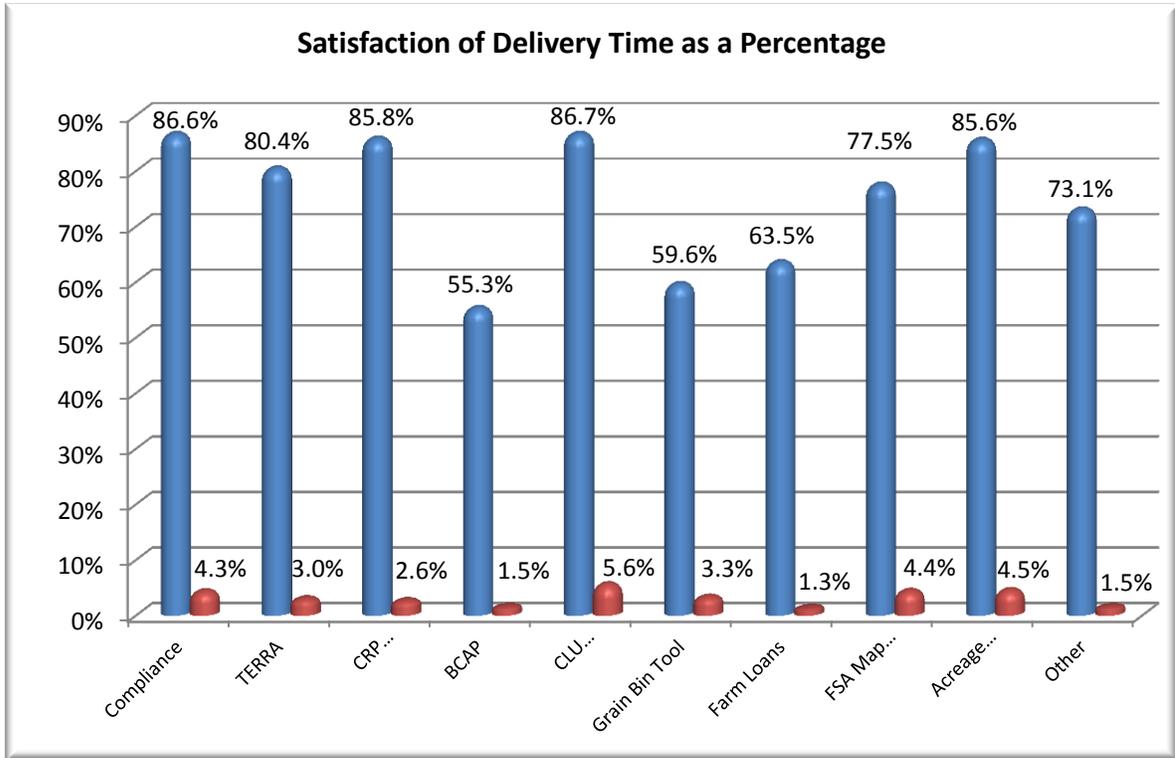


Chart 4 – Question 7

**Question 8.** With regards to using NAIP imagery for the following programs, how satisfied are you with the dates the imagery was flown? (check all that apply).

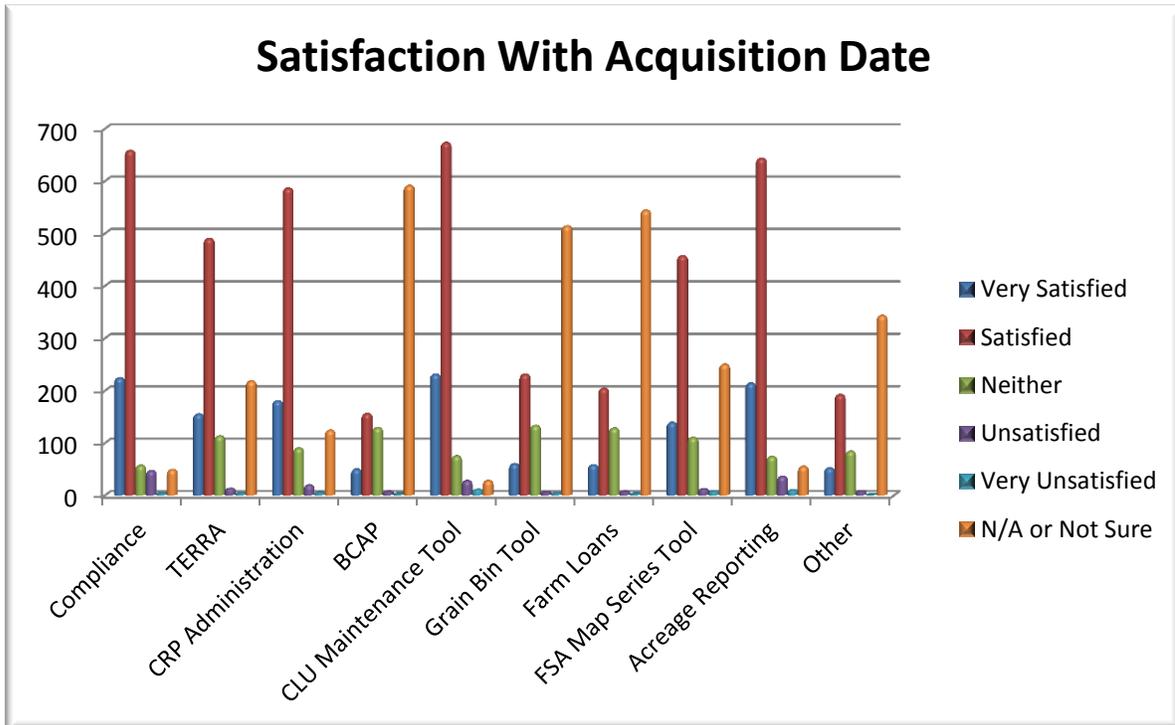


Chart 5 – Question 8

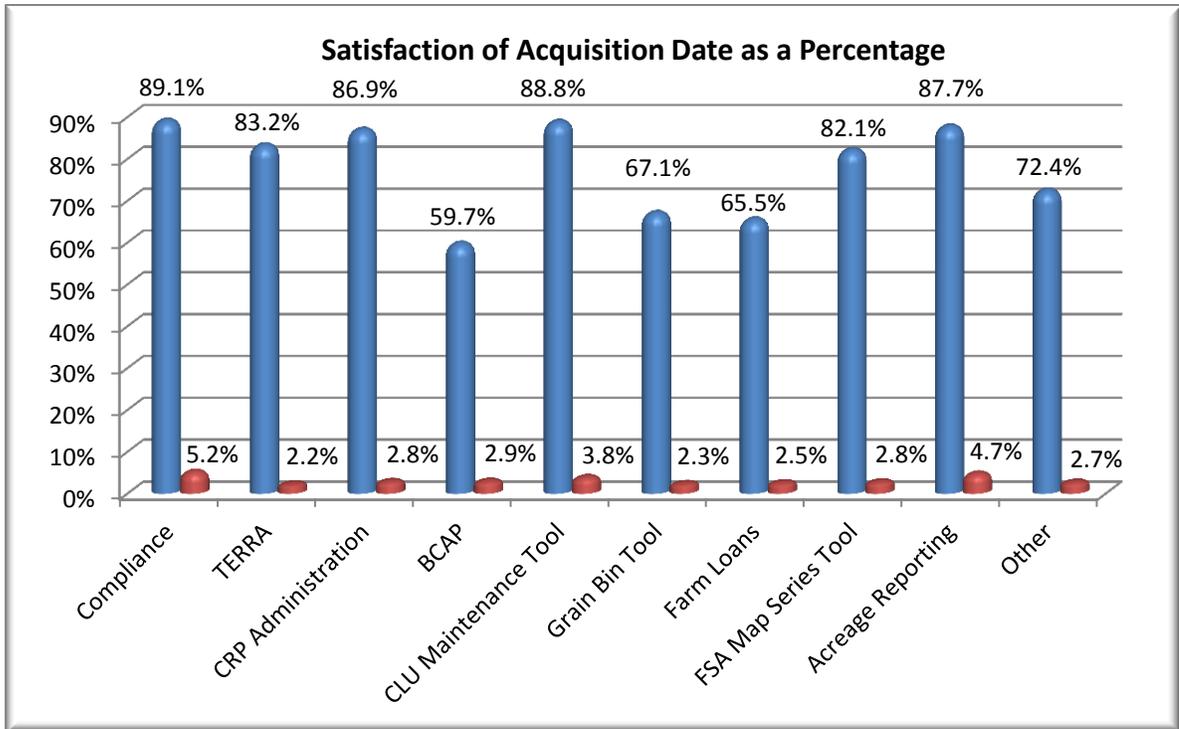


Chart 6 – Question 8

**Question 9.** With regards to using NAIP imagery for the following programs, how satisfied are you with the overall quality of the imagery? (check all that apply)

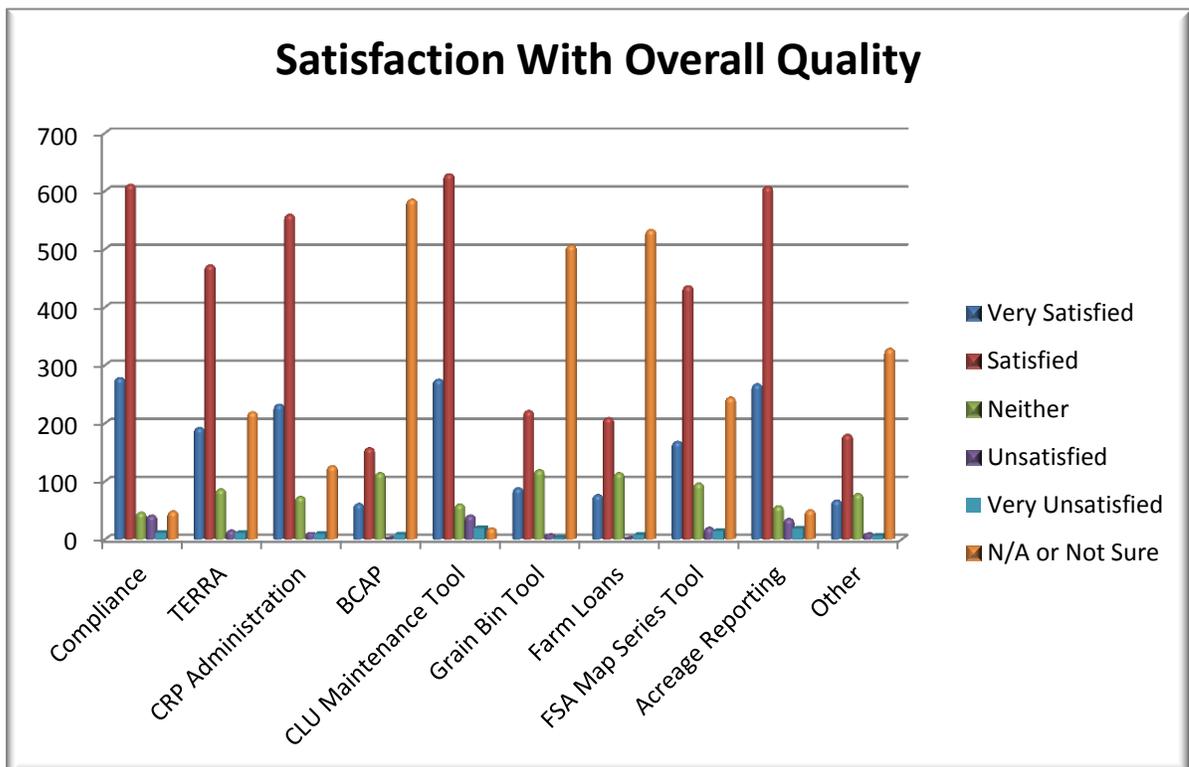


Chart 7 – Question 9

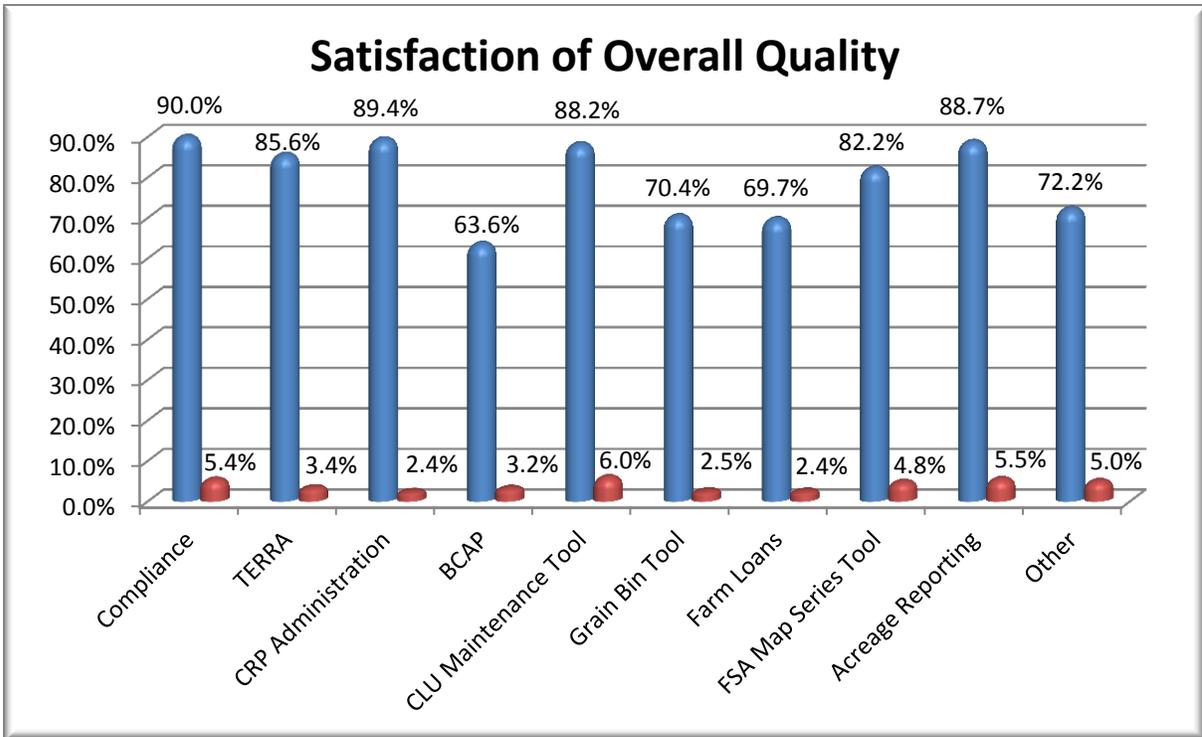


Chart 8 – Question 9

**Question 10.** Did you use NAIP imagery when creating maps?

This question is to get a general idea of how often NAIP is used to generate any kind of map for FSA program support. Responses were either yes or no. The percentage of “yes” responses went up a few points from the previous year. Such a high percentage of usage of NAIP imagery shows the importance of this imagery for FSA mapping.

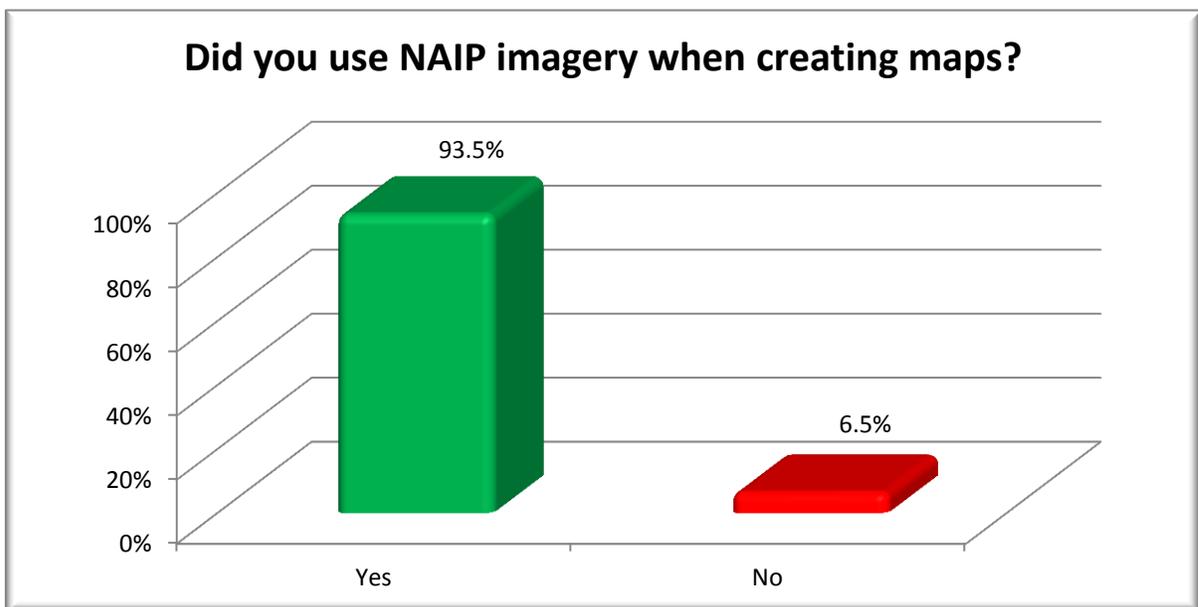
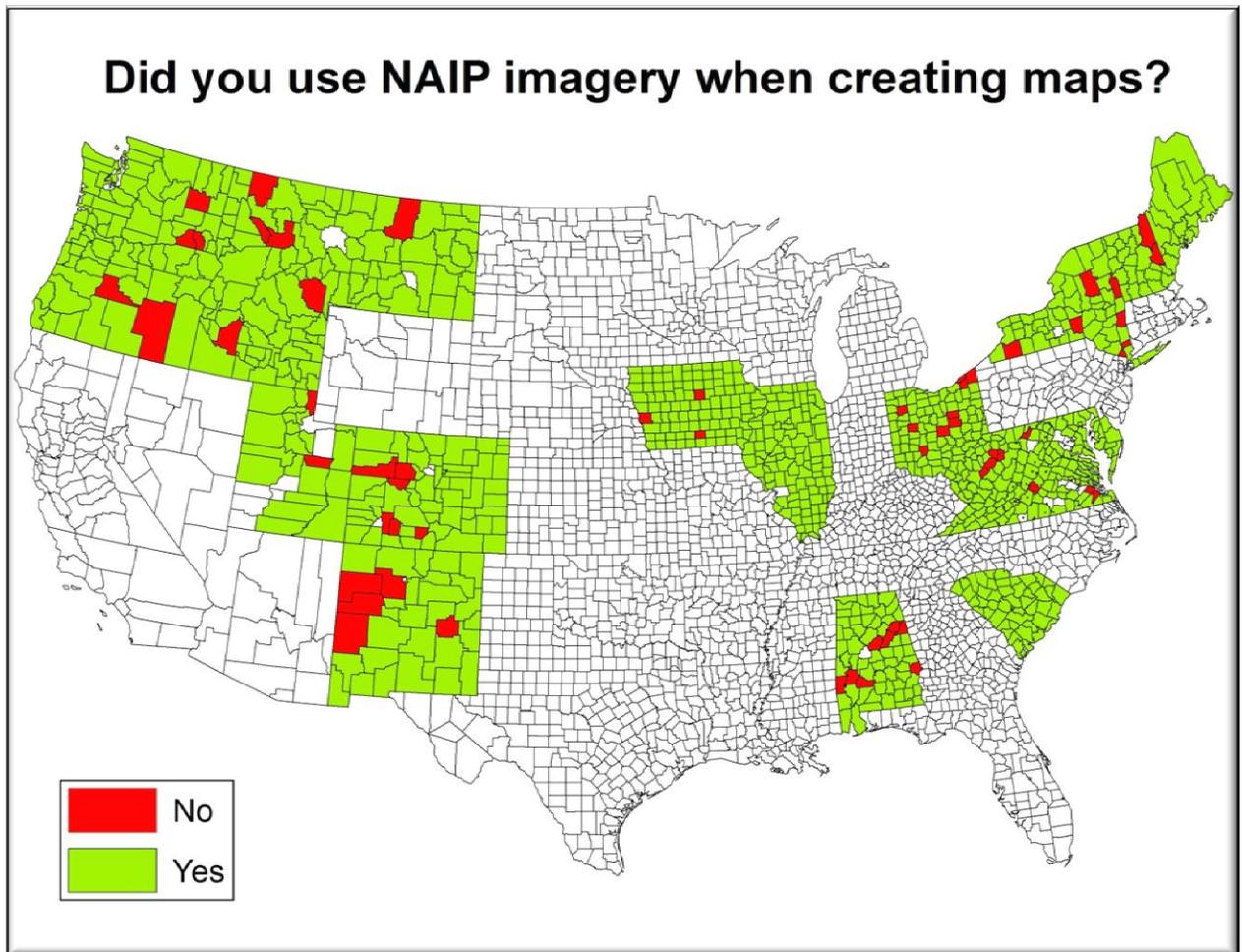


Chart 9 – Question 10



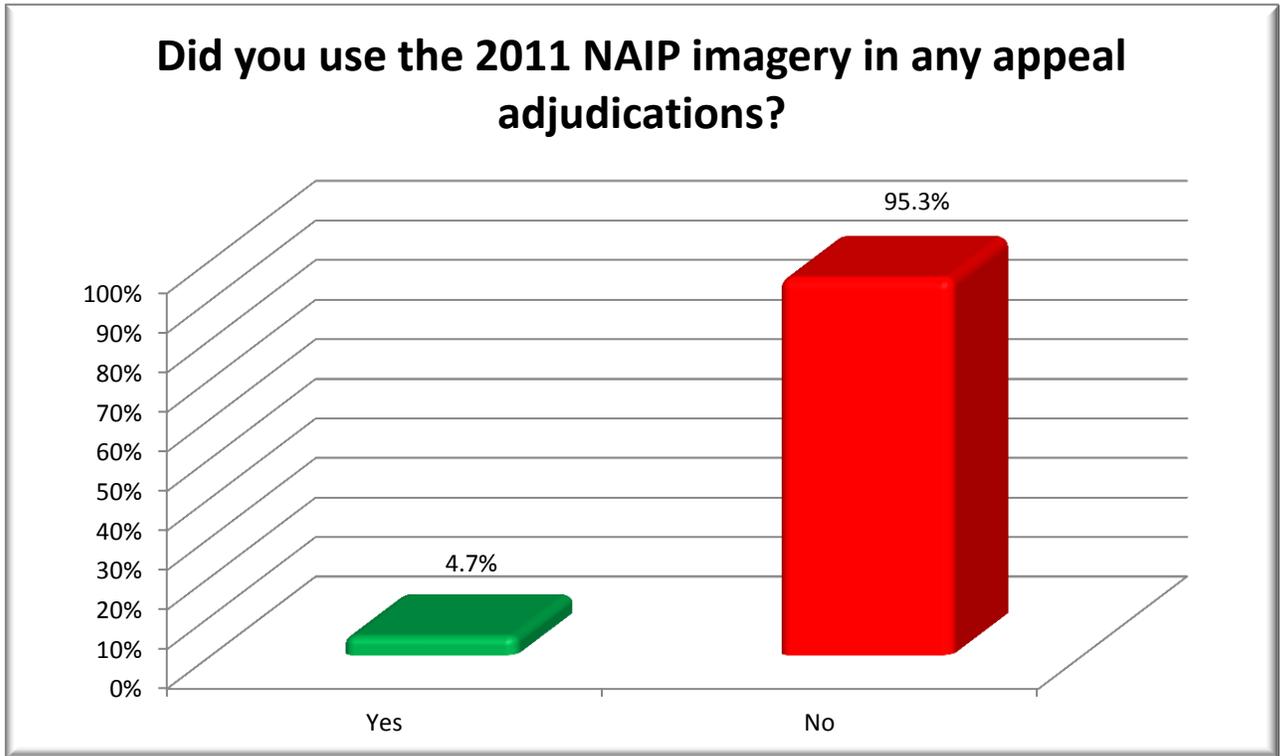
*Map 2 – Did you use NAIP imagery when creating maps?*

**Question 11.** Approximately how many times did you use the 2011 NAIP imagery when generating maps?

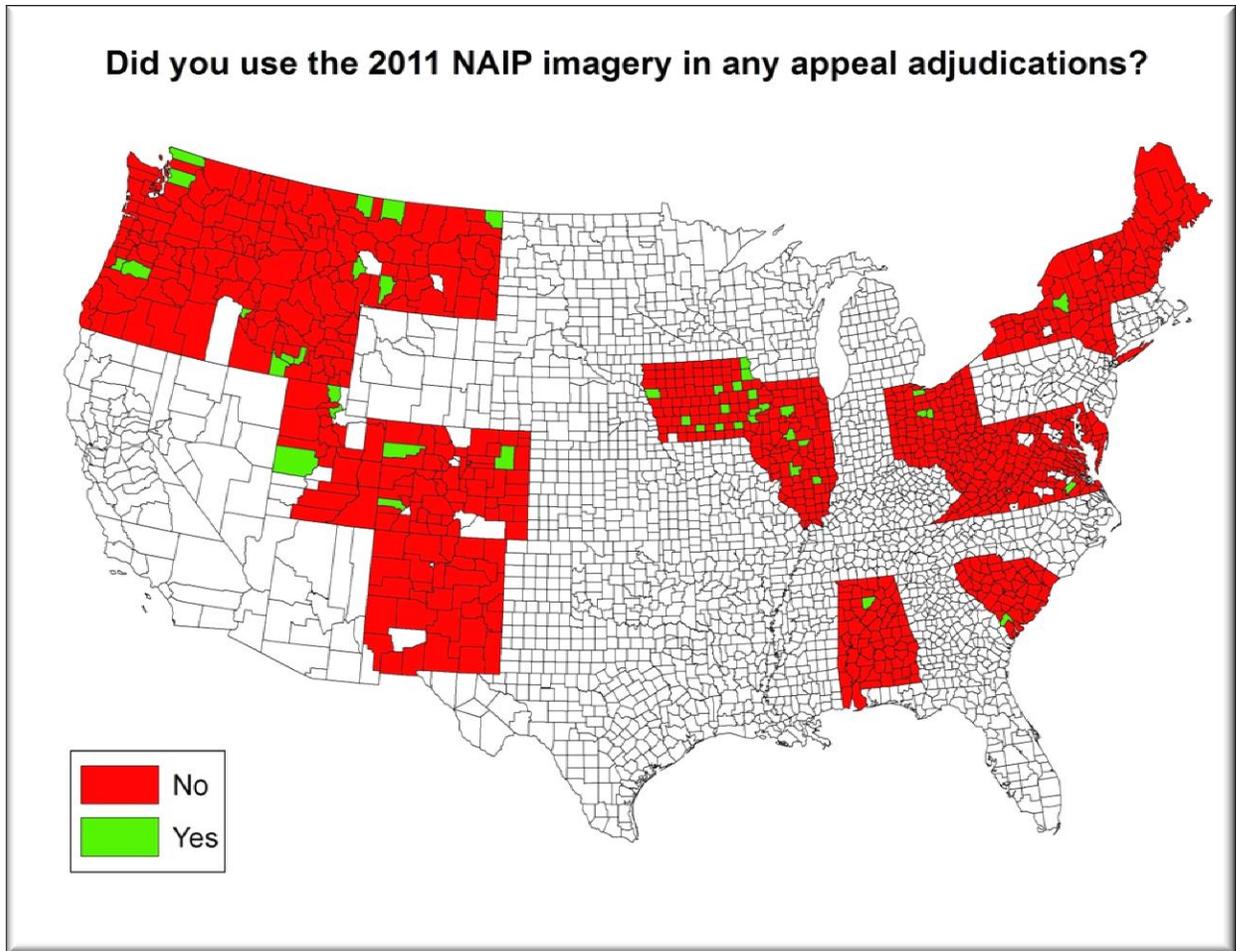
If respondents answered “Yes” to question 10, they were asked to list approximately how many times NAIP was used to create maps; if “No”, question 11 was skipped. There were 981 responses given. The range of values was from 0 to 999,999,999. With the few outliers in the half million to almost 1 billion range removed, the majority of responses were in the hundreds to several thousand range. Including the outliers, the average response was 1,003,292 times, however, excluding the outliers, the average number was 979.

**Question 12.** Did you use the 2011 NAIP imagery in any appeal adjudications?

There were less than 50 responses to this question with the majority answering no or skipping the question. Although few counties reported using the NAIP imagery for adjudication purposes, it is fair to say that in these few cases the imagery can be a valuable tool.



*Chart 10 – Question 12*



**Question 13.** How many times was the 2011 NAIP imagery used in appeal adjudications?

If “Yes” was answered on question 12, respondents were asked to enter how many times NAIP was used in appeal adjudications. For those that answered this question, the average amount that NAIP was used was 8 times, with a range of 1 to 100, with most reporting less than 10. The total amount that NAIP was used for appeal adjudications by the twenty states that participated in the survey this year was 416 times.

**Question 14.** On what date were you first notified that the 2011 NAIP imagery for your state was available in the image service?

The range of dates for this question extended from April 15, 2011 to February 24, 2012. “Have not received yet” was also an option. The single date selected the most was October 24, 2011, with a total of 58 responses.

**On what date were you notified that the 2011 NAIP imagery for your state was available on the image service?**

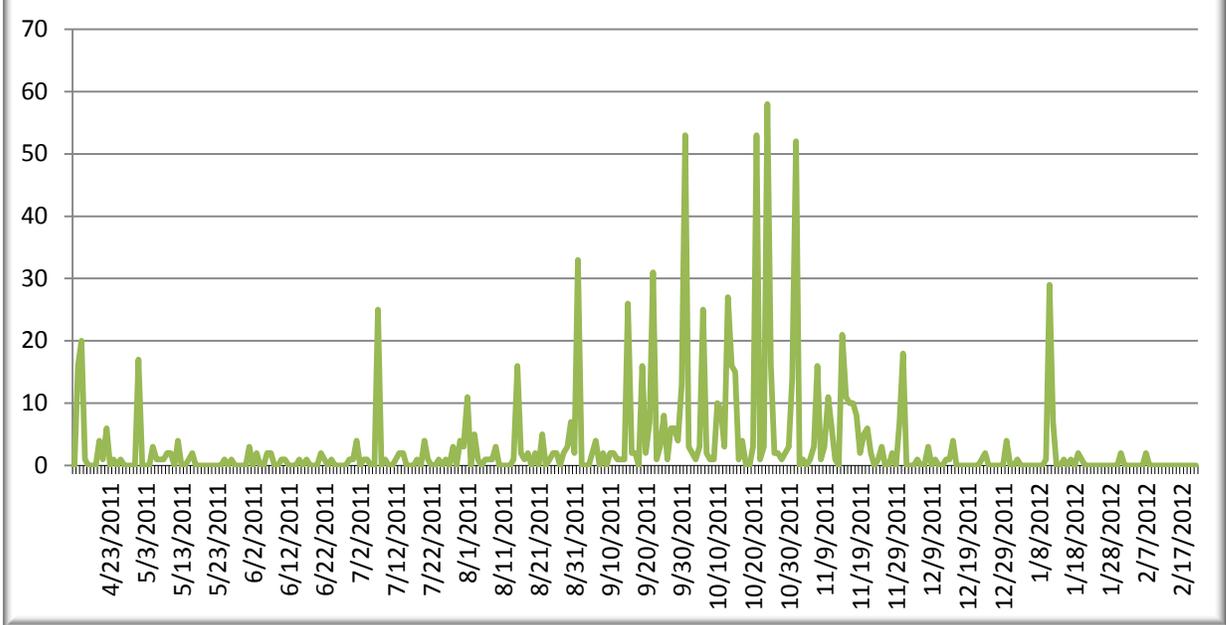


Chart 11 – Question 14

**First Receipt of Imagery by Month**

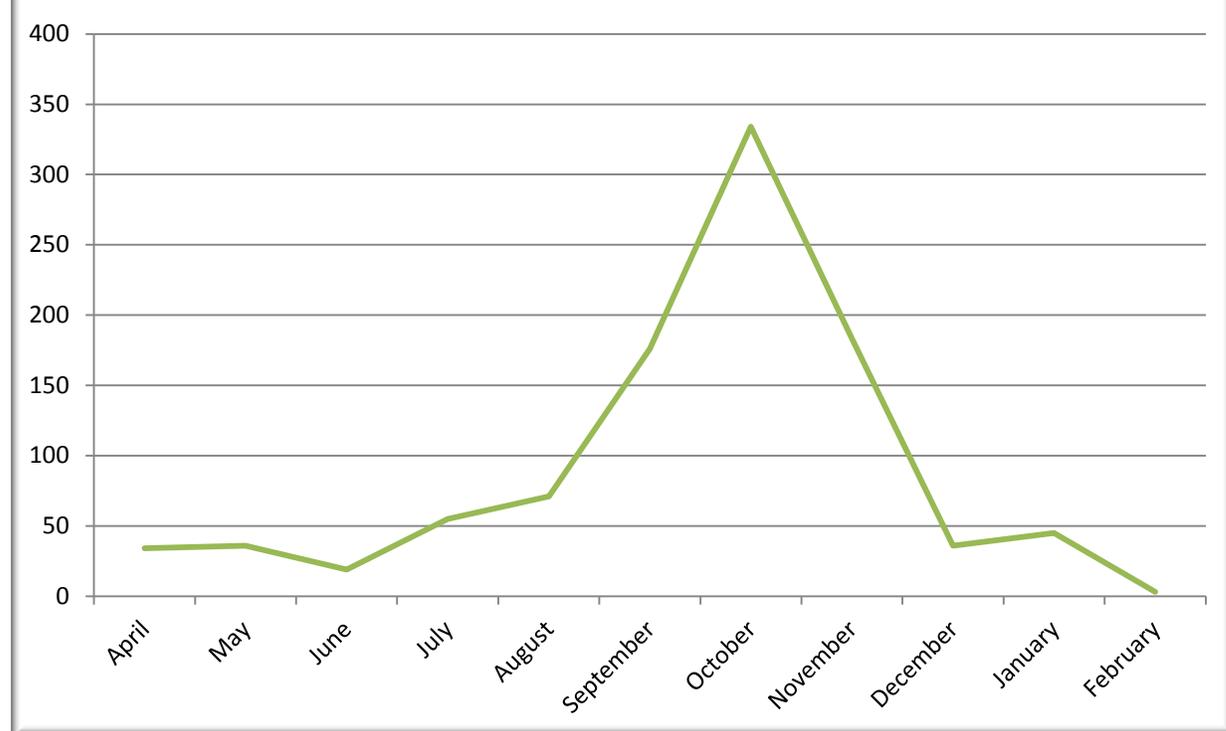
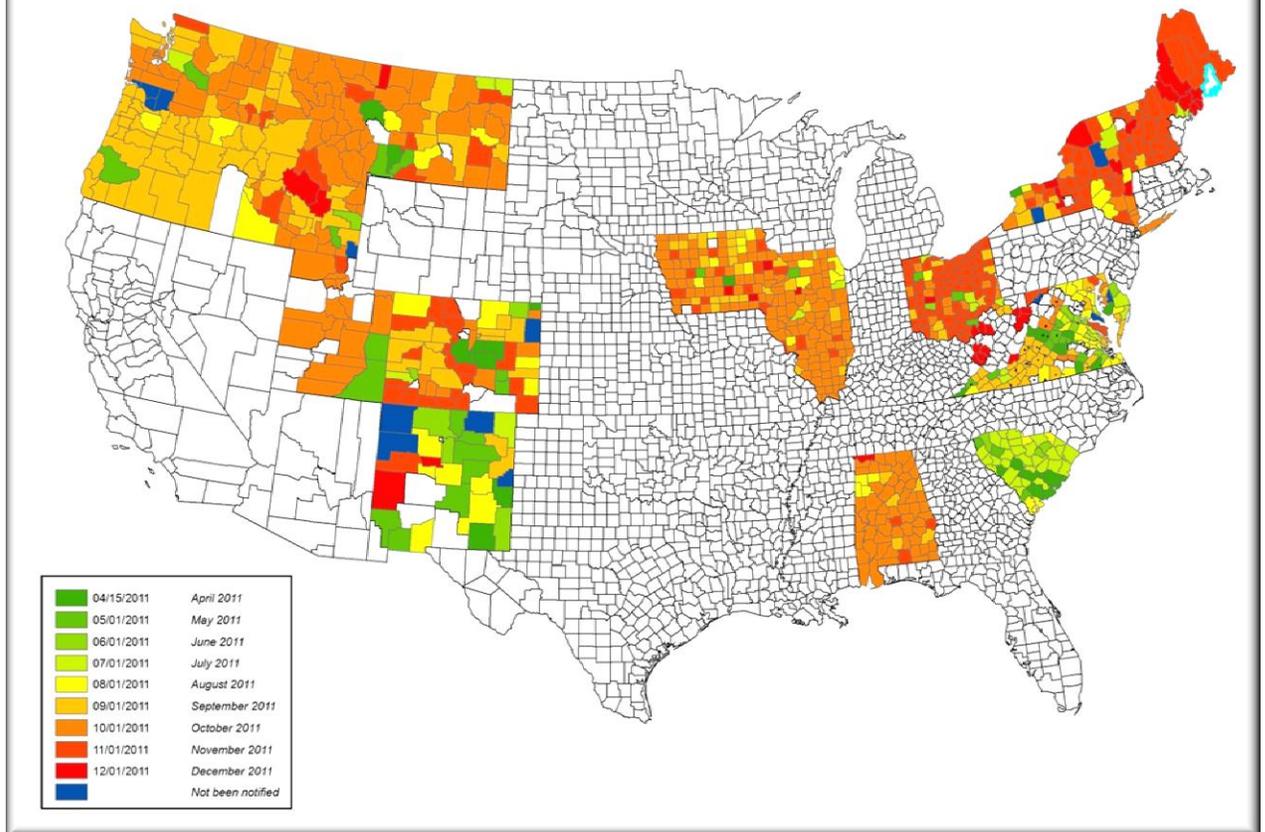


Chart 12 – Question 14

**On what date were you first notified that the 2011 NAIP imagery for your state was available in the image service?**



*Map 4 – Month notified that NAIP was available*

**Question 15.** If 2011 NAIP imagery for your area could have been collected on a single day, what day would have been ideal?

This question had a range of dates from April 1, 2011 to December 31, 2011. The most frequent collection date selected as ideal was July 15, 2011 with 14% of the responses. July was noted as the ideal collection month with 39% of total responses.

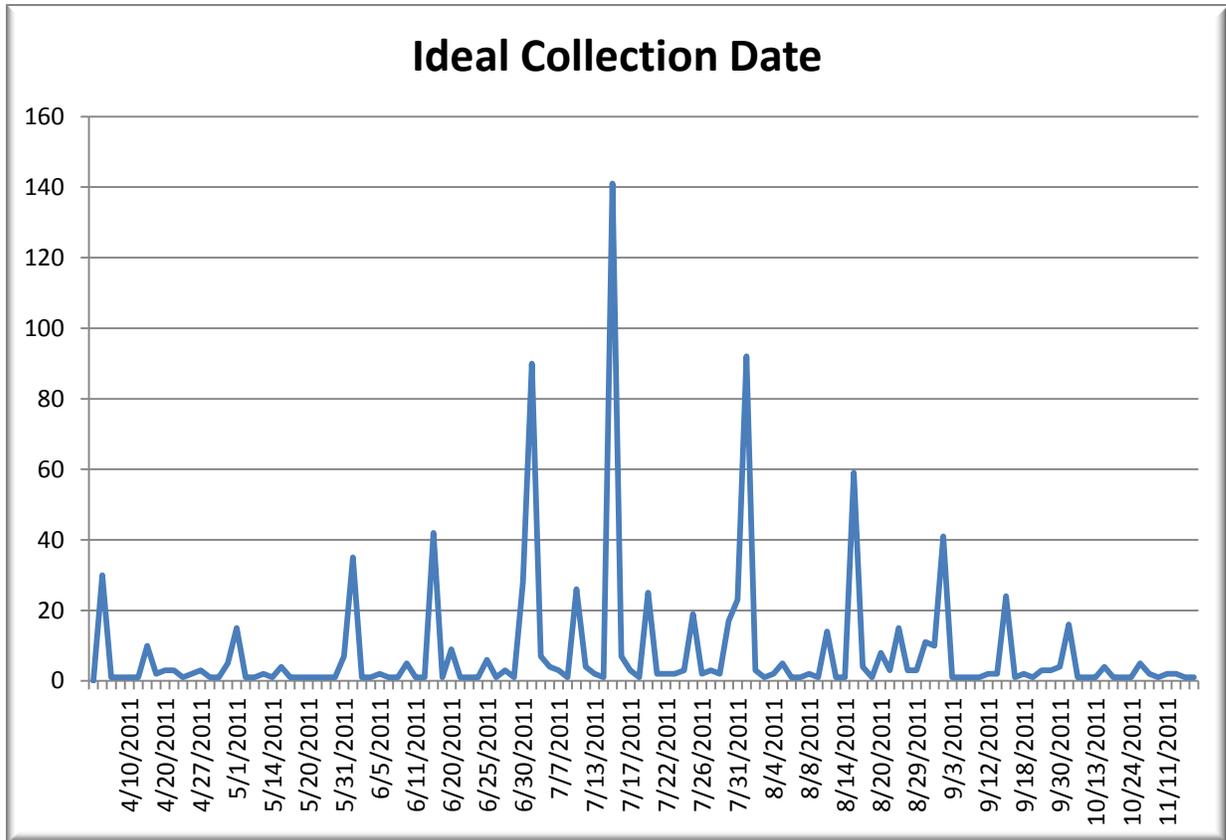


Chart 13 – Question 15

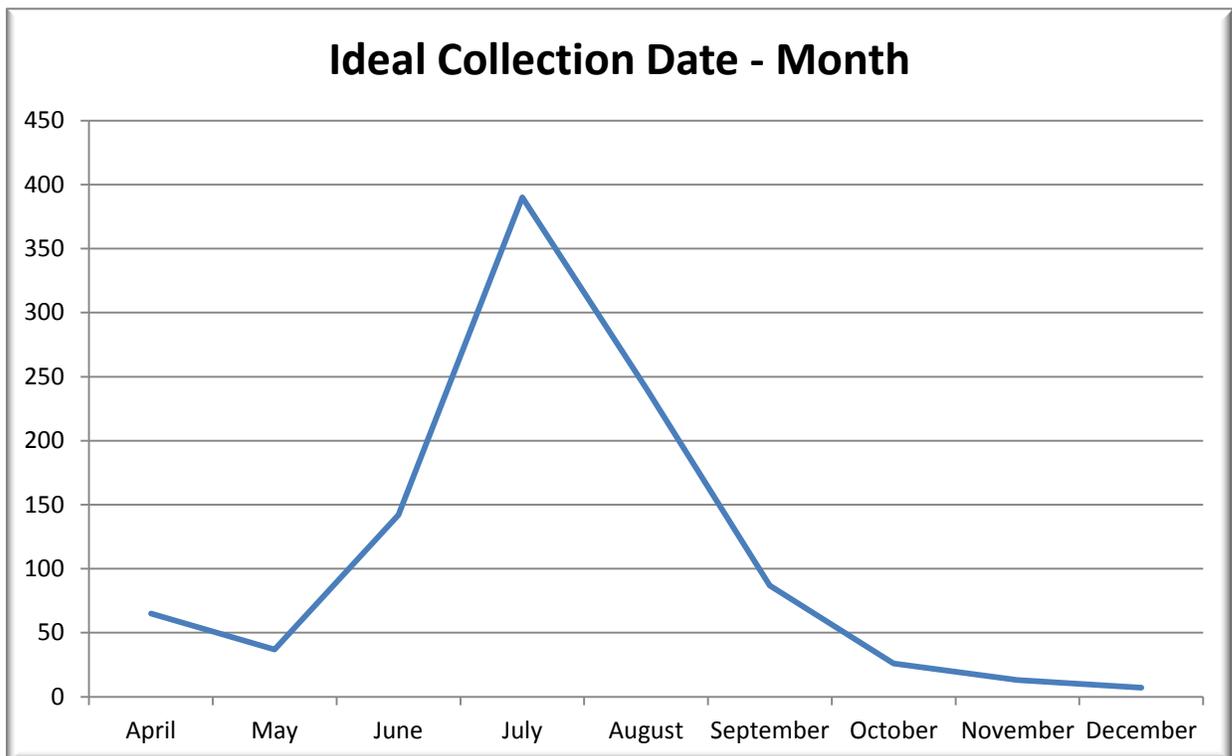
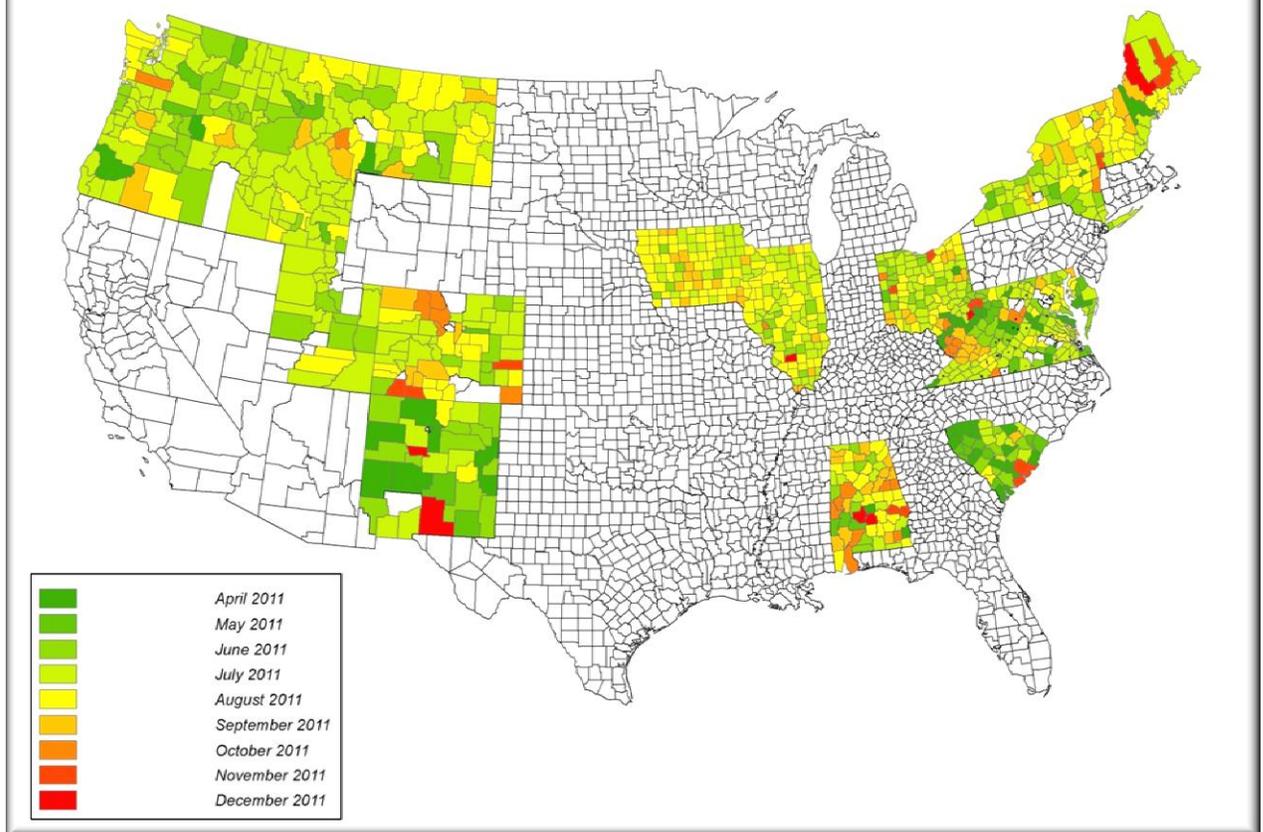


Chart 14 – Question 15

**If 2011 NAIP imagery for your area could have been collected on a single day, what day would have been ideal?**



*Map 5 – Ideal Acquisition Date-Month*

**Question 16.** Given that a single date is not possible, what flying season do you feel would have been acceptable to meet your farm program needs?

This question asked what flying season would have been ideal to meet program needs. The respondents were asked to enter a start date and an end date. Based upon all responses, the average start date was 9/25/2011 and the average end date was 11/19/2011. July 1, 2011 was the most frequently entered start date and August 15, 2011 was the most frequently entered end date. Because this question allowed users to enter a date, rather than selecting from a pull down menu, dates for years other than the 2011 flying season were entered, resulting in substantial outliers. Dates from July 1, 2010 through August 31, 2014 were entered. Of the 1007 dates entered for the ideal starting date, 285 were not in the year 2011. For the ideal ending date, 292 of the dates entered were not in 2011. Overall approximately 29% of dates entered did not fall in the year pertaining to the question. In the graphs below, the dates not falling in 2011 were not included.

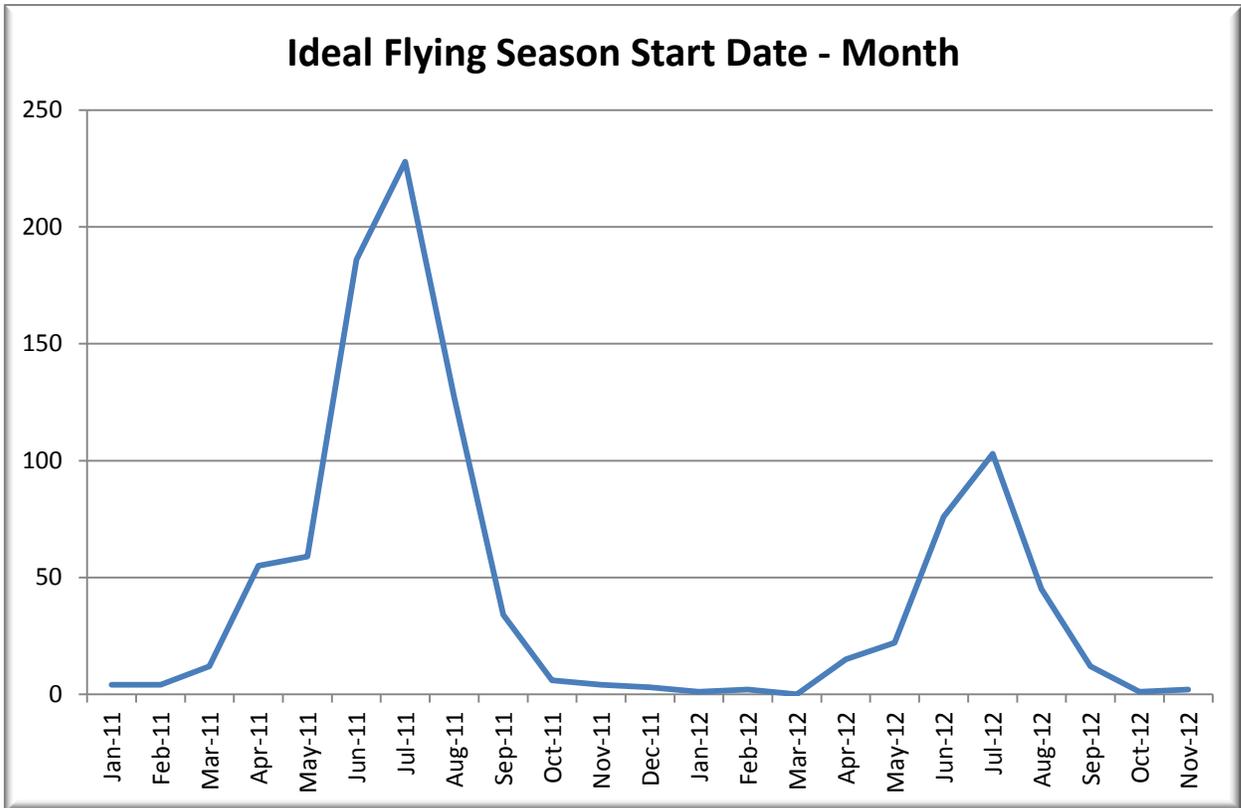


Chart 15 – Question 16

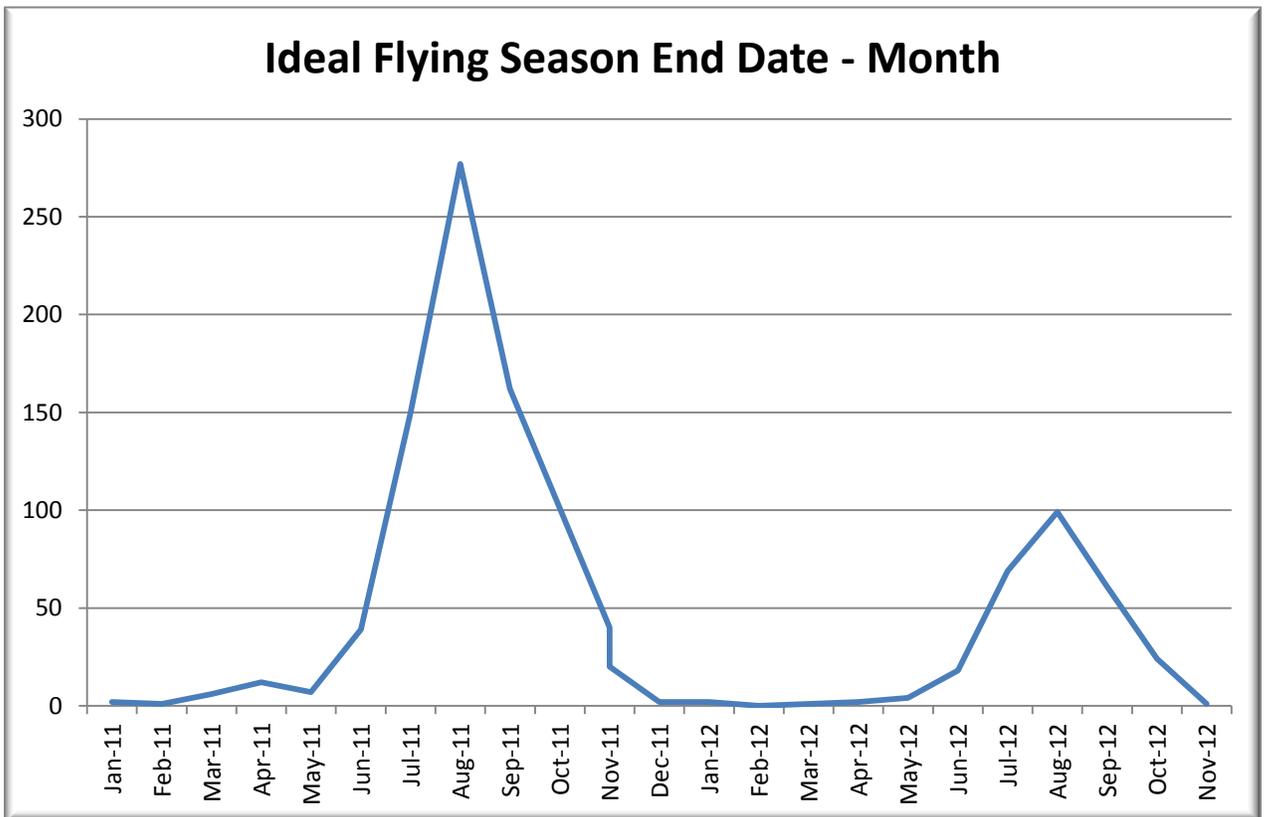
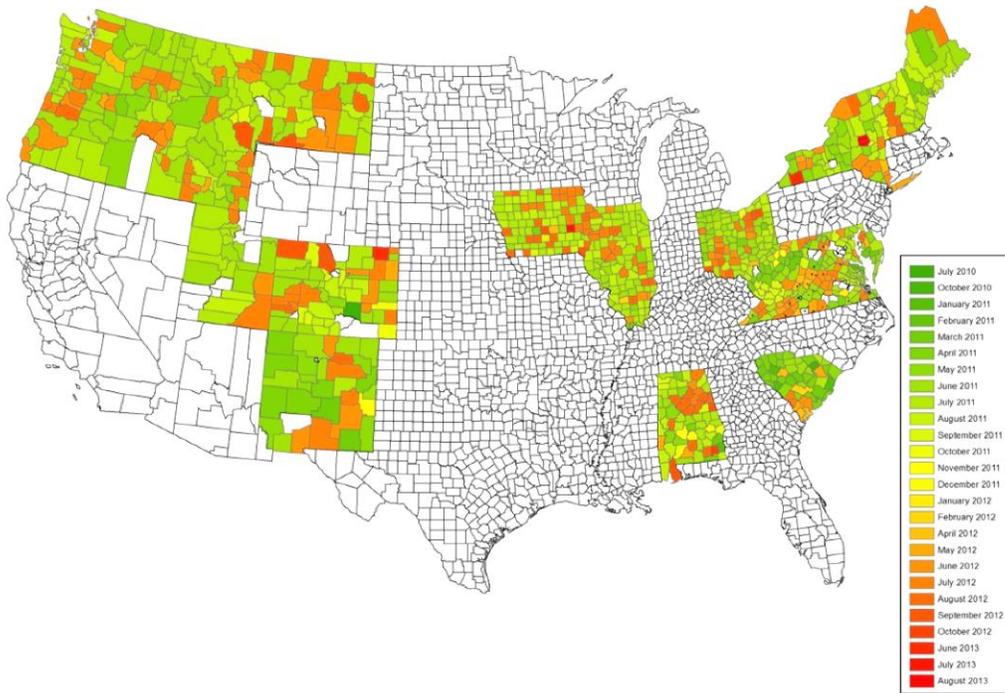


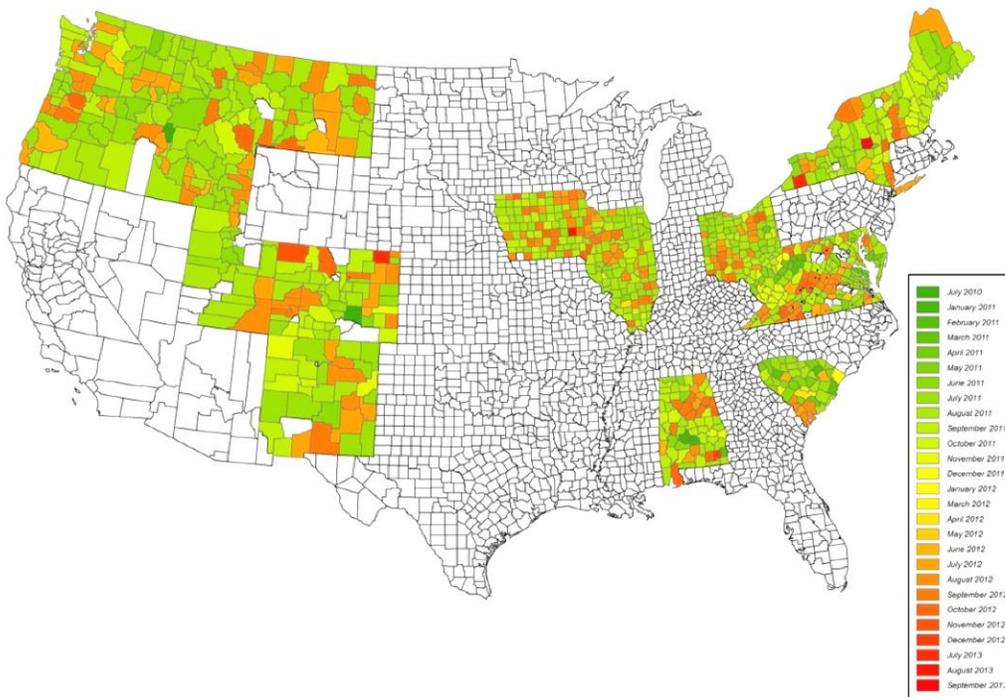
Chart 16 – Question 16

## Ideal Flying Season Start Date - Month



Map 6 – Ideal Flying Season Start-Month

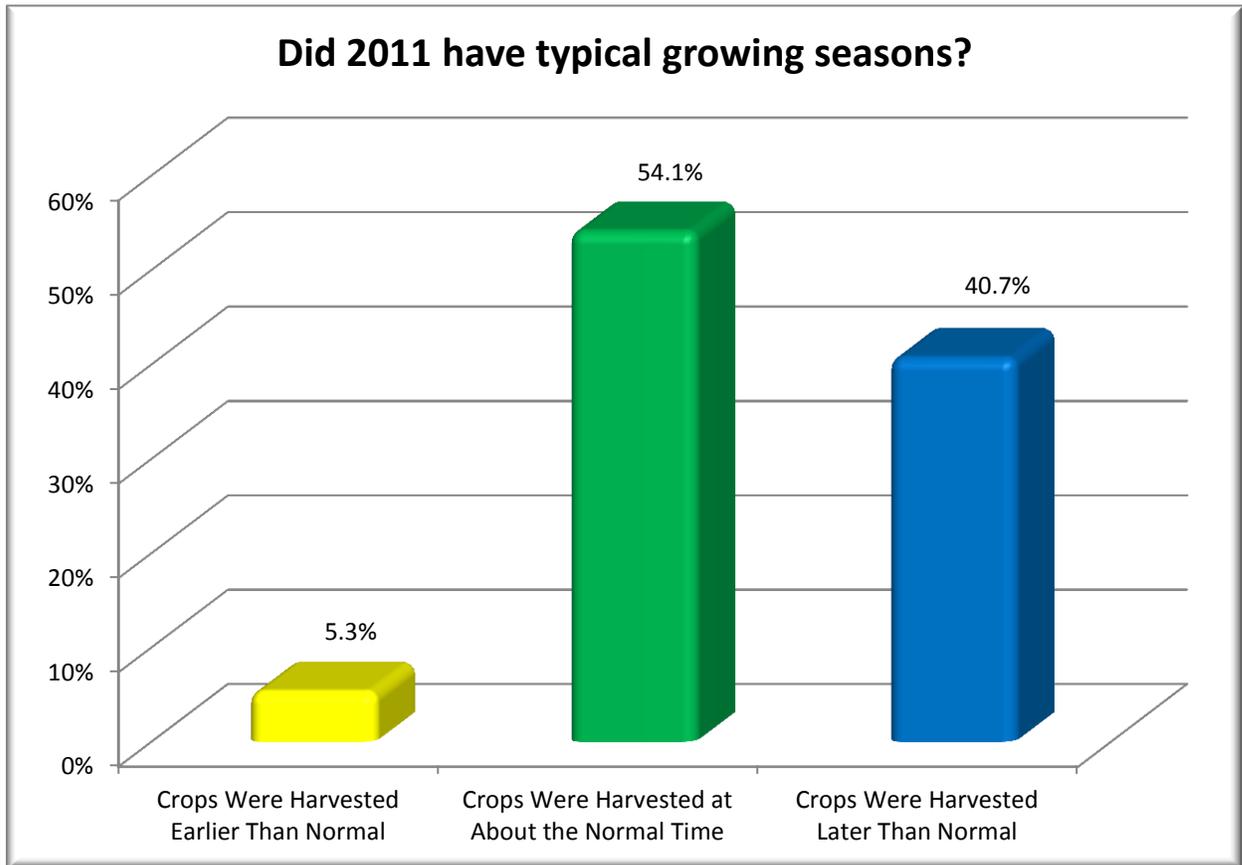
## Ideal Flying Season End Date - Month



Map 7 – Ideal Flying Season End-Month

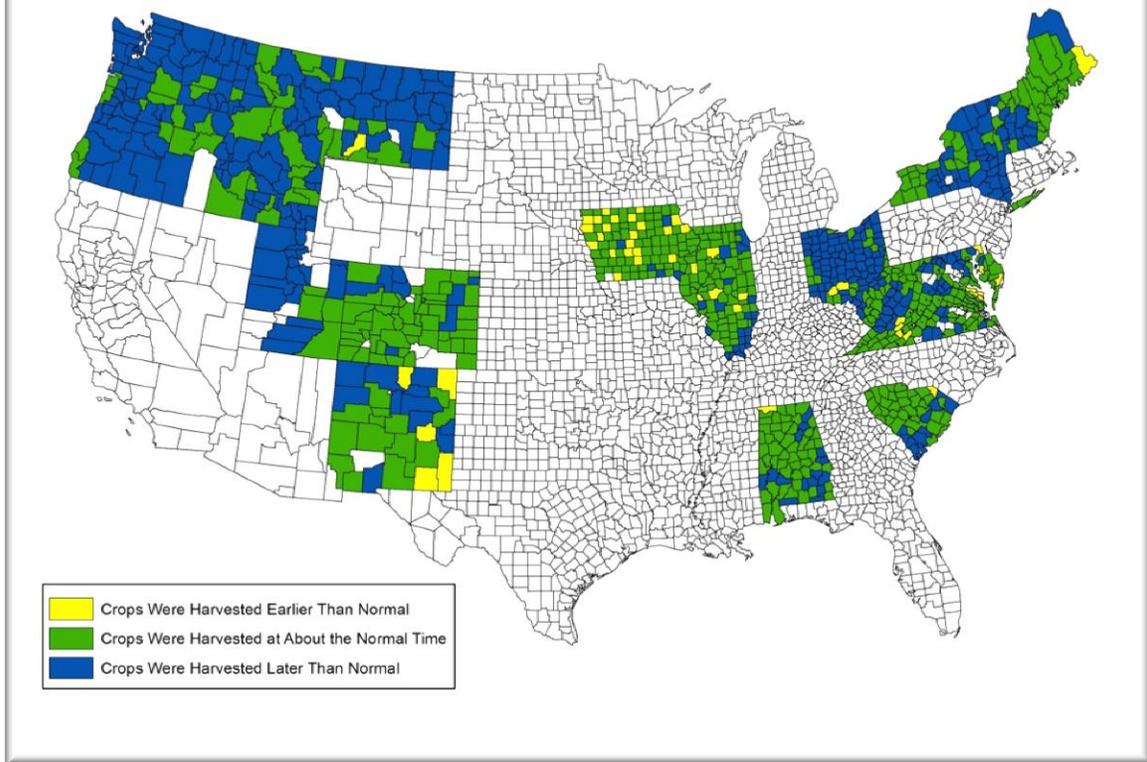
**Question 17.** Did 2011 have typical growing seasons in your state?

This question had 3 possible choices: “Crops Were Harvested Earlier Than Normal”, “Crops Were Harvested at About the Normal Time”, “Crops Were Harvested Later Than Normal”. The majority of crops were reported as being harvested at the normal time or later than normal. Very few responded that the growing season was earlier than normal whereas over 40% reported a later than normal growing season.



*Chart 17 – Question 17*

## Did 2011 have a typical growing season in your state?



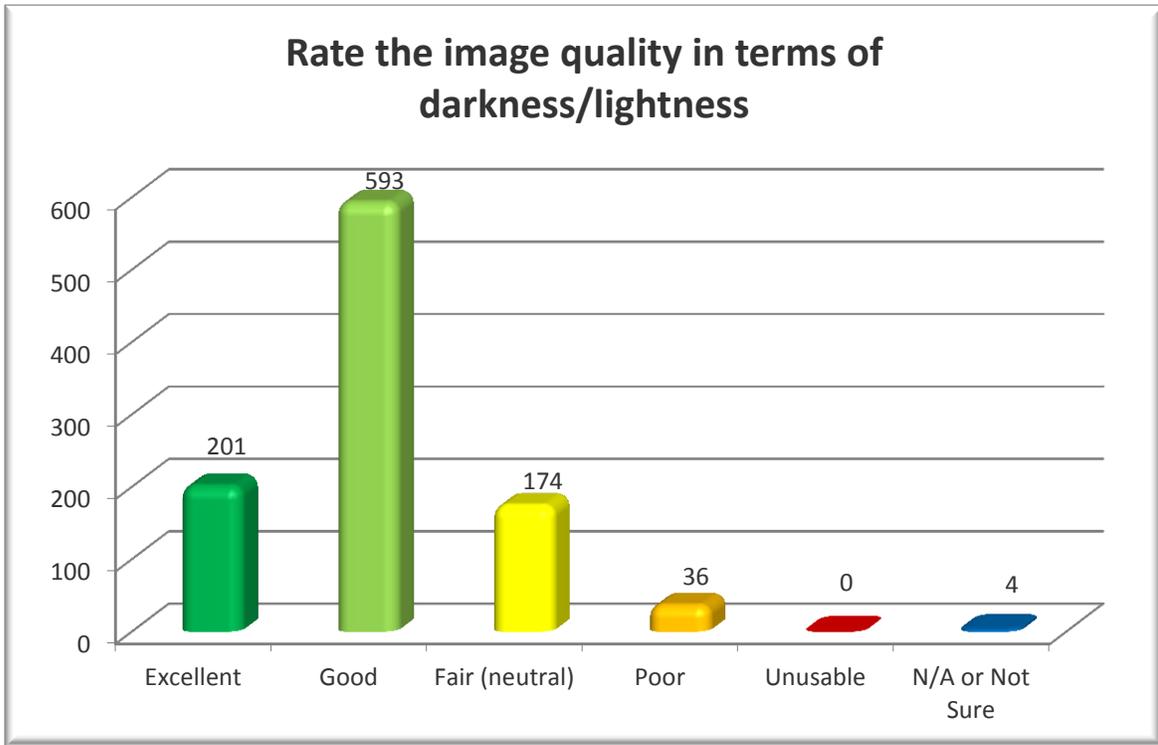
Map 8 – Typical Growing Seasons

Questions 18 through 20 address the image quality of the 2011 NAIP imagery. Survey takers were asked to respond with the following options for each question:

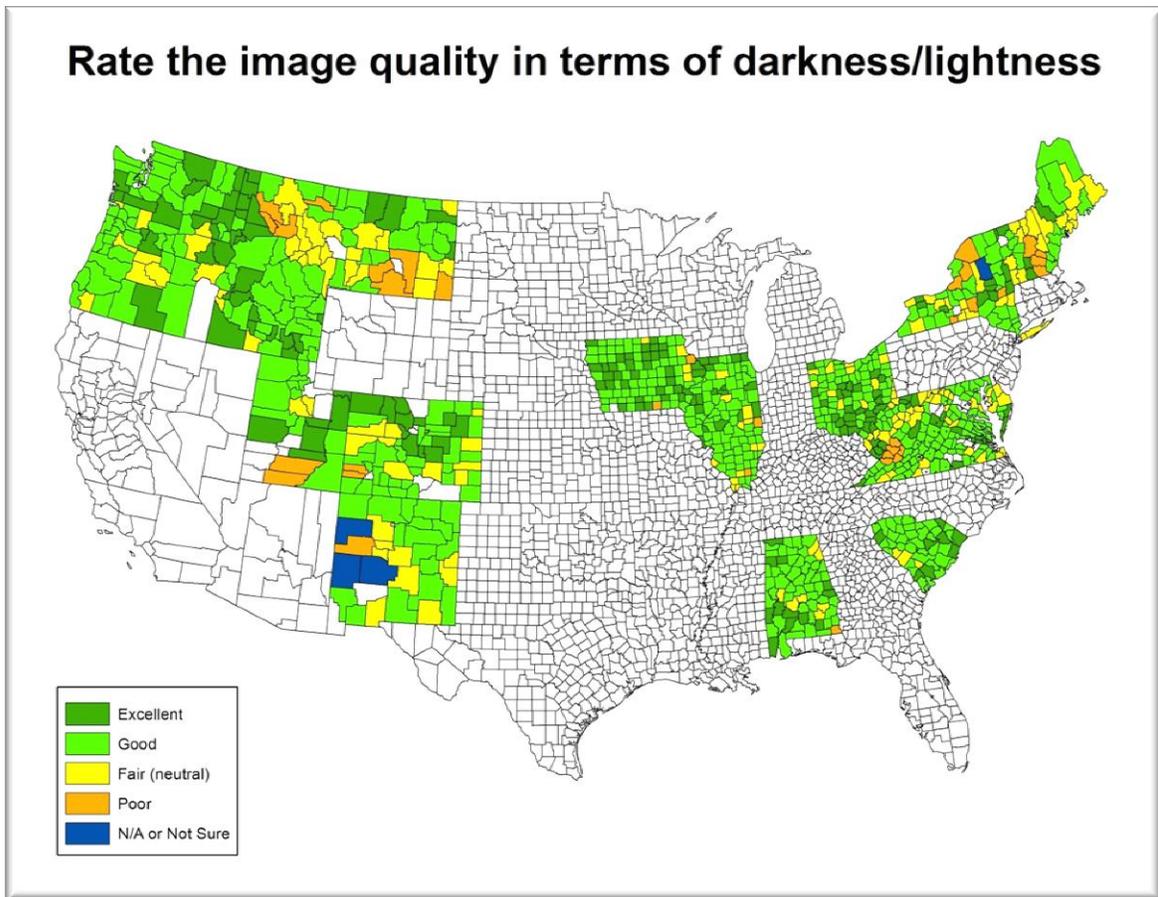
- Excellent
- Good
- Fair (Neutral)
- Poor
- Unusable
- N/A or Not Sure

**Question 18.** Rate the image quality in terms of darkness/lightness

78.7% answered “Excellent” or “Good”. 3.6% answered “Poor” or “Unusable”.



*Chart 18 – Question 18*



*Map 9 – Image Quality-Lightness/Darkness*

**Question 19.** Rate the image quality in terms of contrast

75.9% answered “Excellent” or “Good”. 4.7% answered “Poor” or “Unusable”.

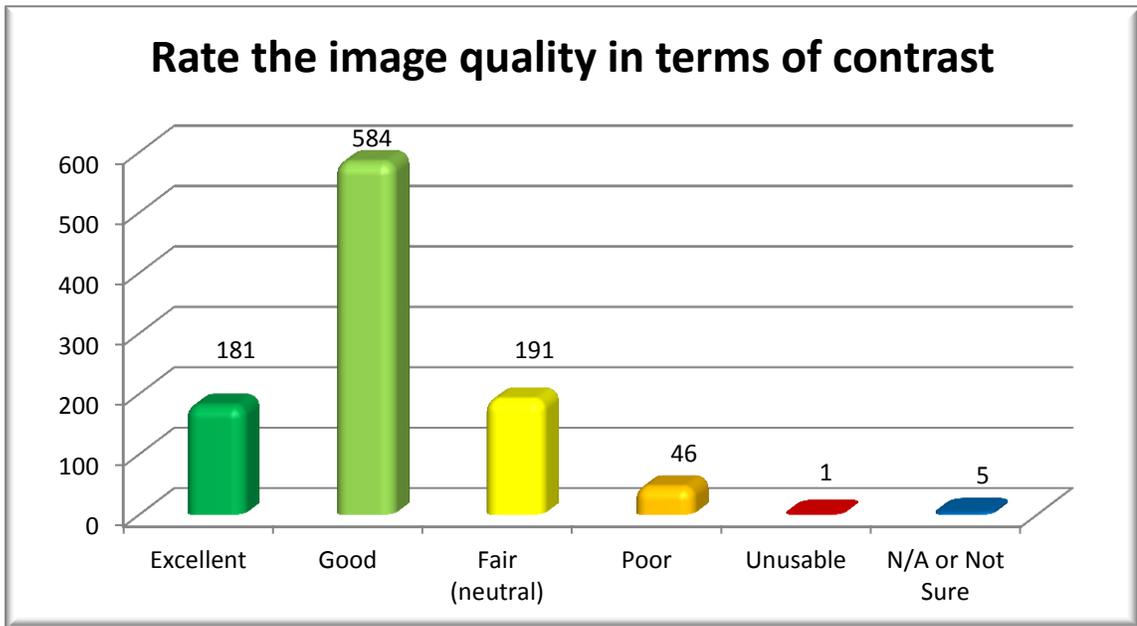
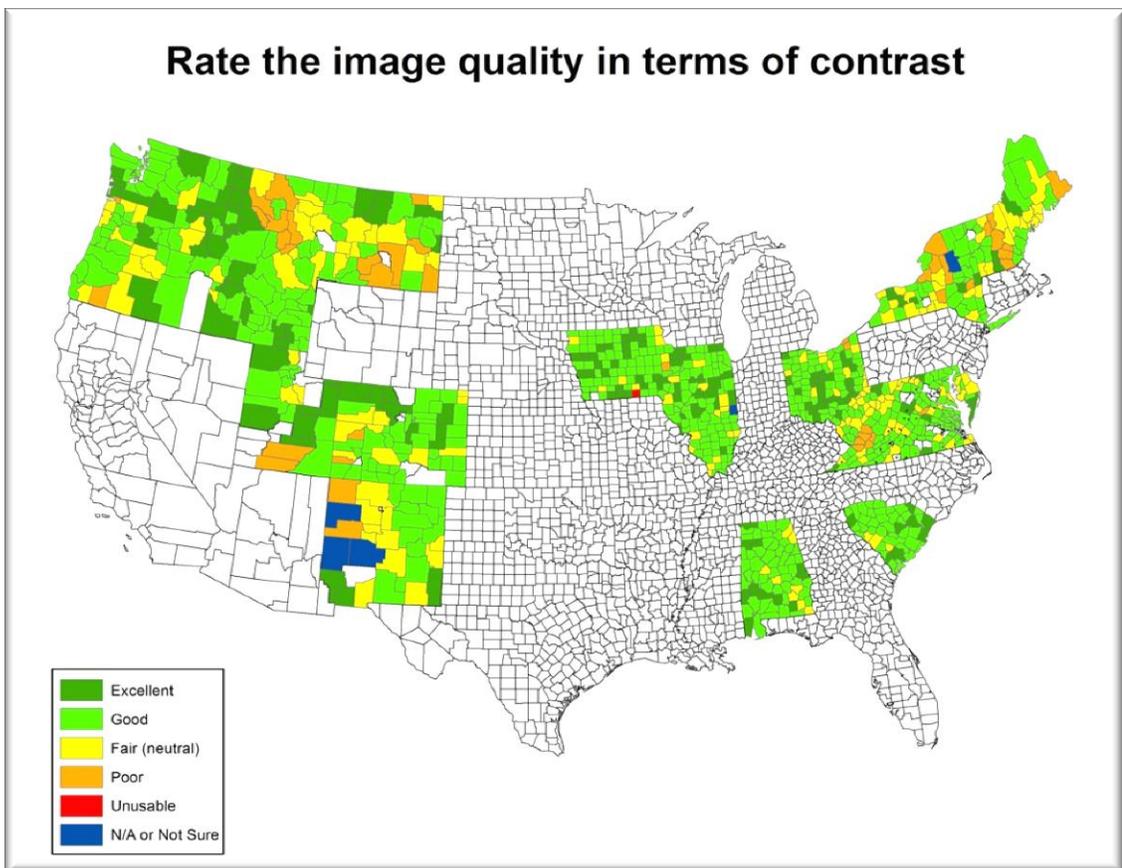


Chart 19 – Question 19



Map 10- Image Quality Contrast

**Question 20.** Rate the image quality in terms of color

76.2% answered “Excellent” or “Good”. 4.8% answered “Poor” or “Unusable”.

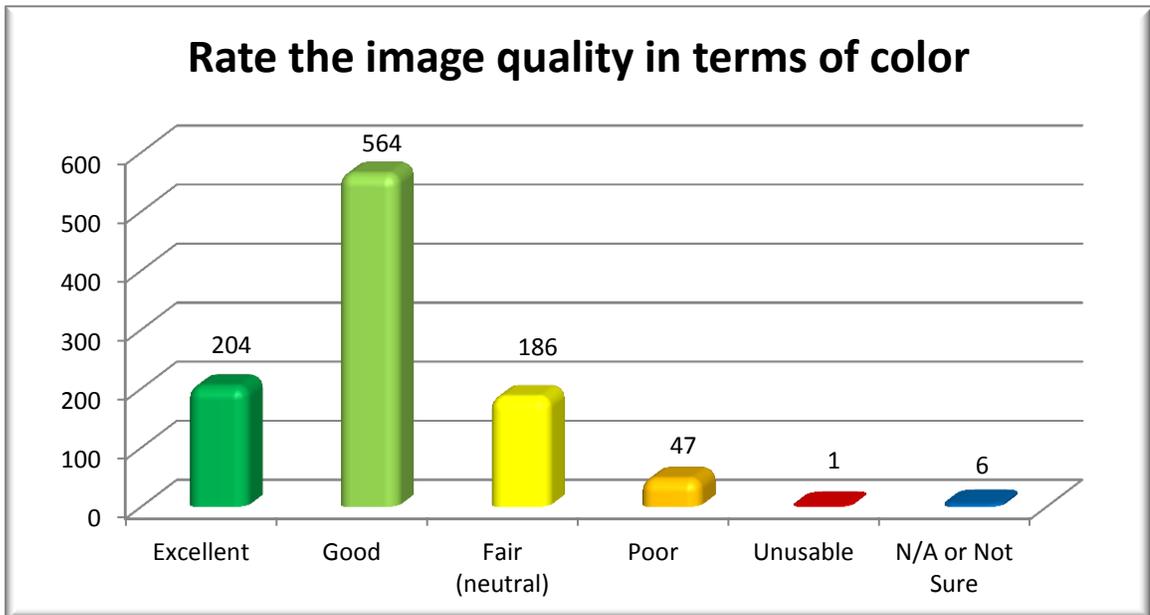
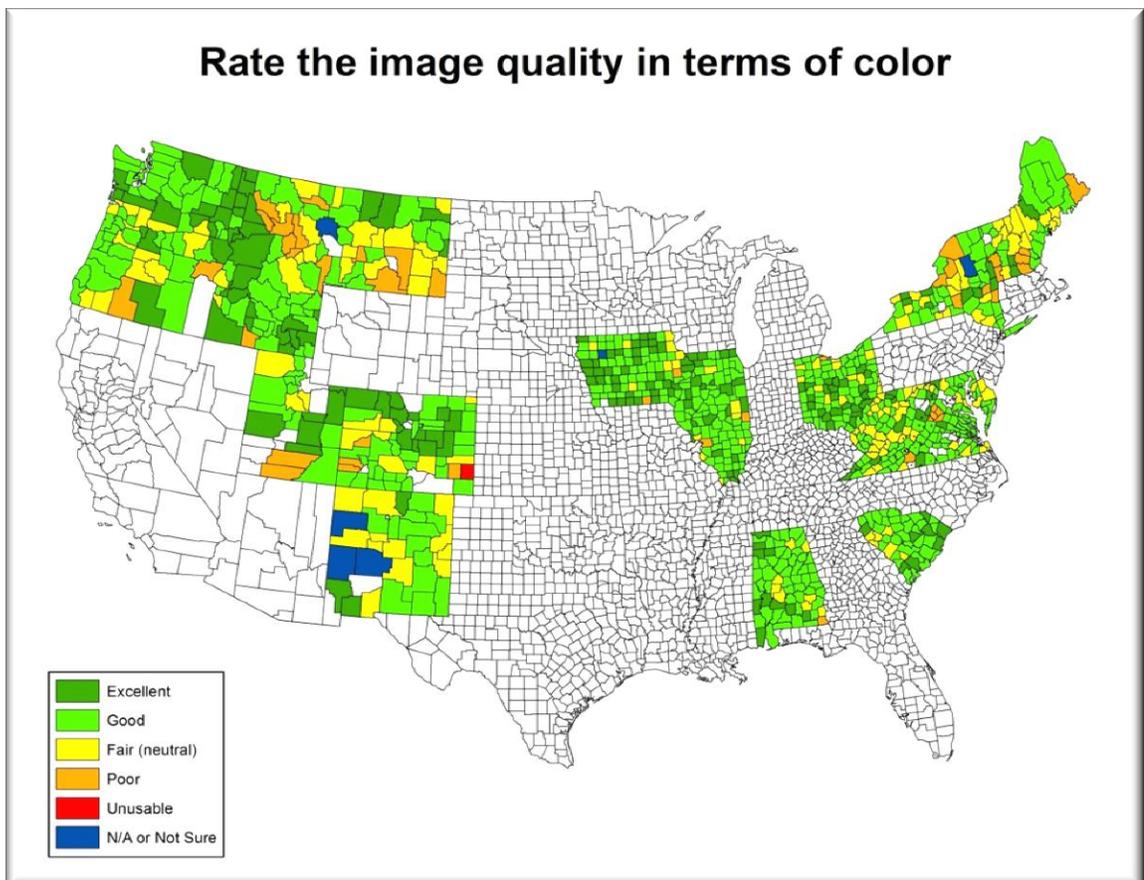


Chart 20 – Question 20



Map 11 – Image Quality Color

**Question 21.** Overall, how satisfied are you with 2011 NAIP acquisition and delivery in your County/State?

This question allowed respondents to choose between the following:

- Very Satisfied
- Satisfied
- Neither
- Unsatisfied
- Very Unsatisfied
- N/A or Not Sure

87.4% were either “Very Satisfied” or “Satisfied” with the overall acquisition and delivery. 2.7% were either “Unsatisfied” or “Very Unsatisfied”.

The average ratings of the three, individual aspects of the NAIP imagery shown in questions 18-20 is 76.9% satisfied /very satisfied and 4.4% unsatisfied/very unsatisfied. It is interesting to compare this to the overall NAIP ratings in question 21. The overall NAIP rating from the respondents was 87.4% favorable, approximately 10% higher than the individual ratings. The same can be seen when comparing the NAIP surveys for 2010 and 2011. The individual image ratings were slightly higher in 2010 than this year; however, the overall rating was 2% higher this year than last year. Nearly 9 out of ten respondents reported being satisfied or very satisfied with the NAIP. This is good news but still leaves some room for improvement.

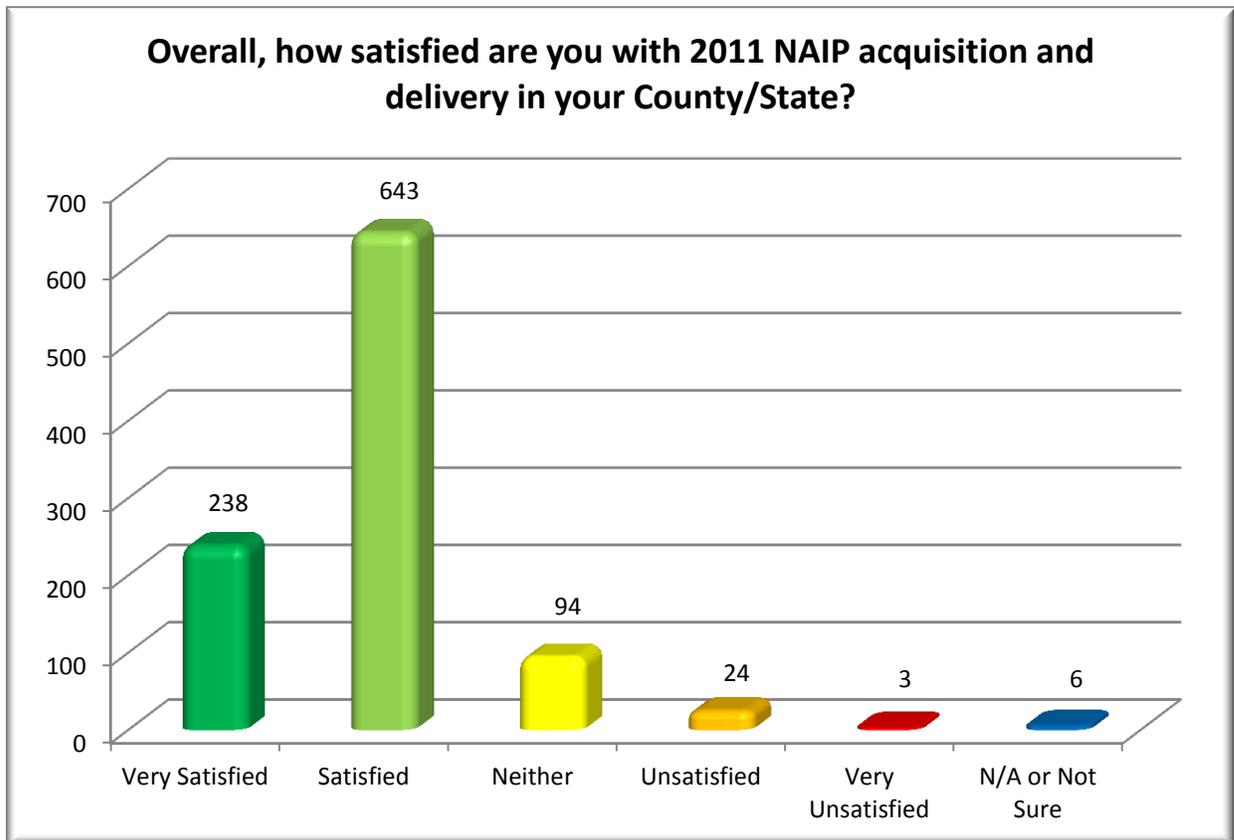
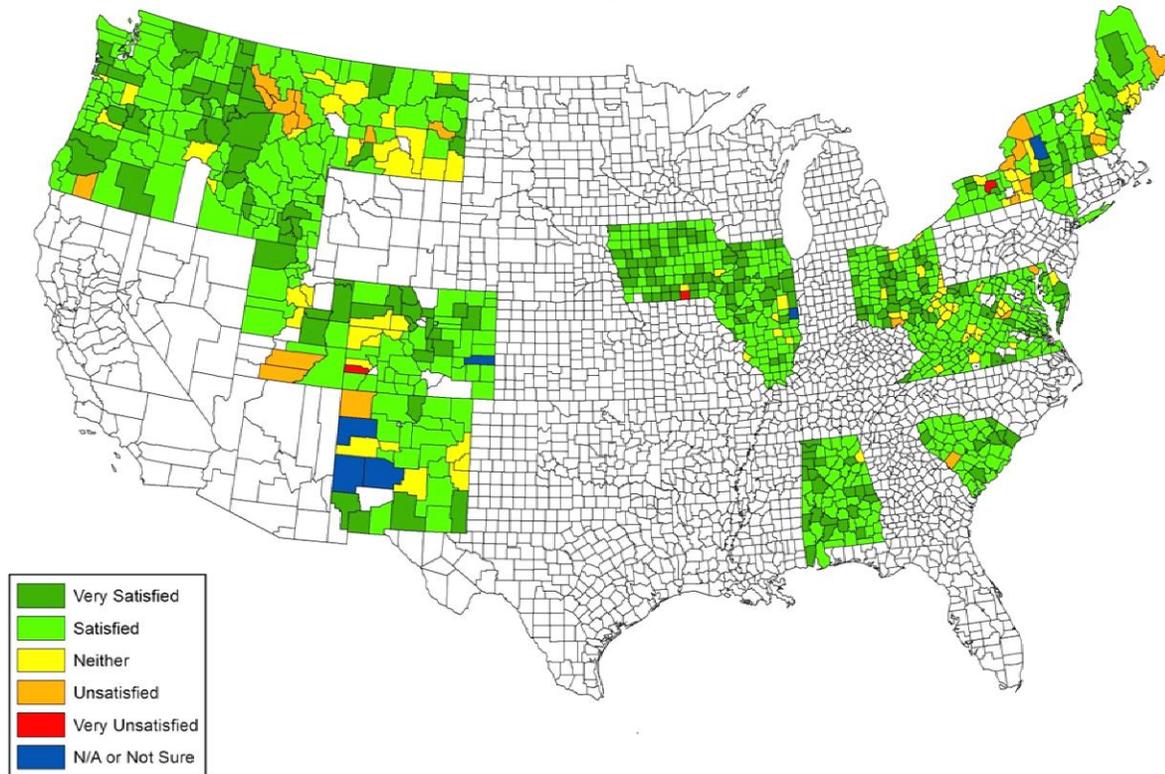


Chart 21 – Question 21

## Overall, how satisfied are you with 2011 NAIP acquisition and delivery in your County/State?



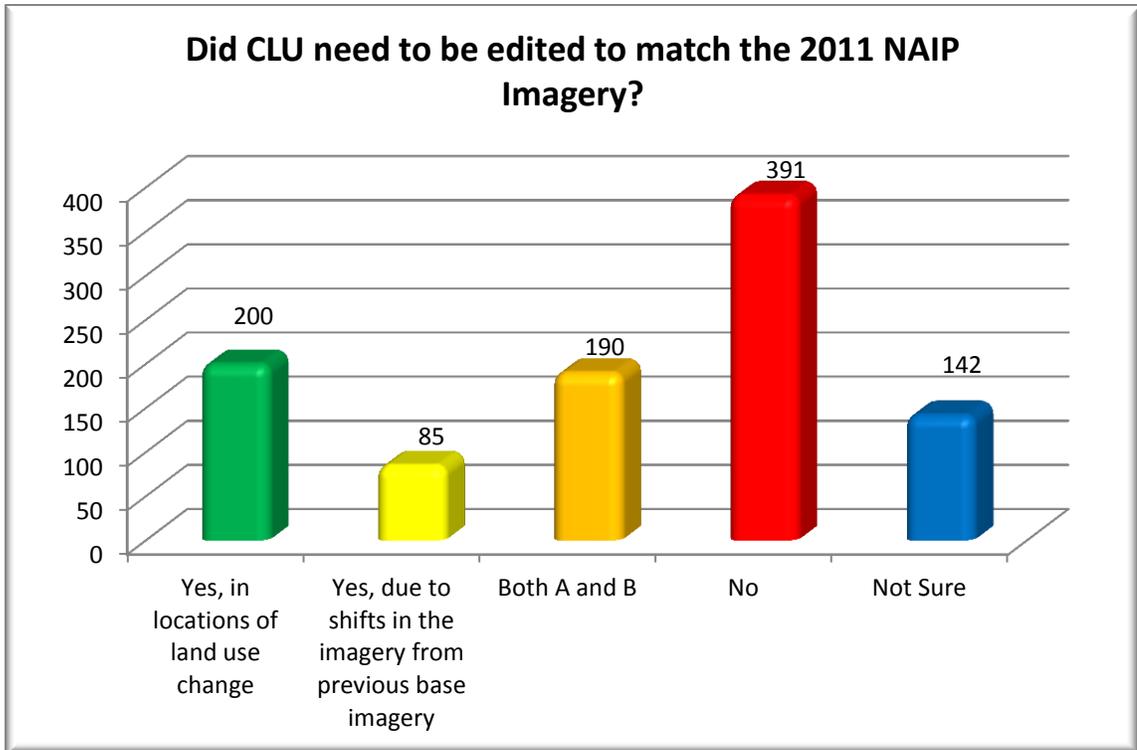
Map 12 – Overall Satisfaction

### Question 22. Did CLU need to be edited to match the 2011 NAIP Imagery?

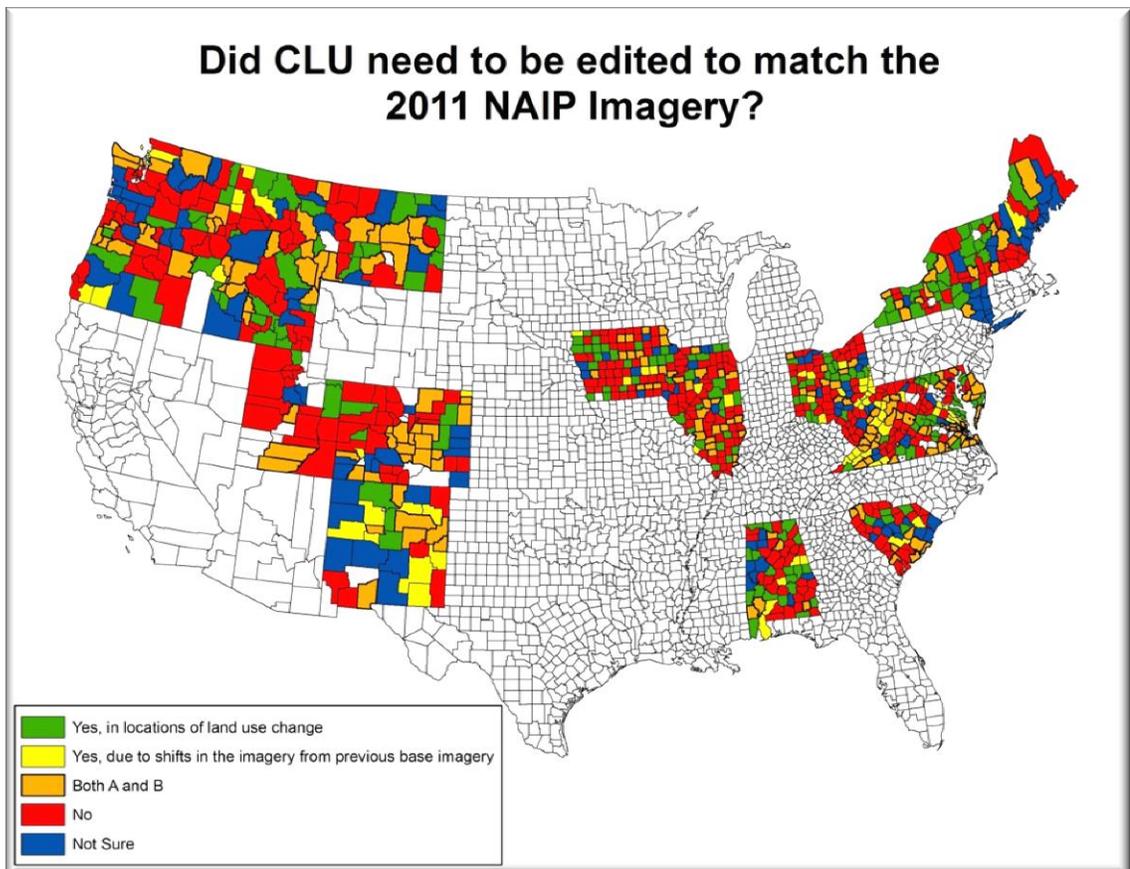
This question tracks whether or not CLU needed to be edited due to land use change or due to imagery shifts from previous NAIP years. Possible responses to this question were:

- A. Yes, in locations of land use change
- B. Yes, due to shifts in the imagery from previous base imagery
- C. Both A and B
- D. No
- E. Not Sure

47% of respondents reported needing to make edits to the CLU whereas nearly 39% reported no editing of the CLU was needed to match the 2011 NAIP imagery. Approximately 20% noted that CLU edits were needed because of land use change whereas only 8% because of shifts between the current and previous years of NAIP.



*Chart 22 – Question 22*



*Map 13 – Did the CLU need to be edited?*

**Four questions about primary and secondary crops were removed from the survey:**

In the previous surveys there were four questions about the most important crop types in terms of total acreage and dollar amount. The responses from year to year changed very little. Since crop information can be found in USDA and other government sources it was decided to remove these questions from the survey. Several other questions were modified to reflect the use of thin client image and data services. The total number of questions in the survey was also reduced from 32 to 27 questions.

**Question 23.** Are you aware that there is now a web service for the state seamline data layer, which includes image acquisition data and other related information that may be accessed in FSA thin client?

Almost 1/3 of the respondents were aware of this service where as over 2/3 were not.

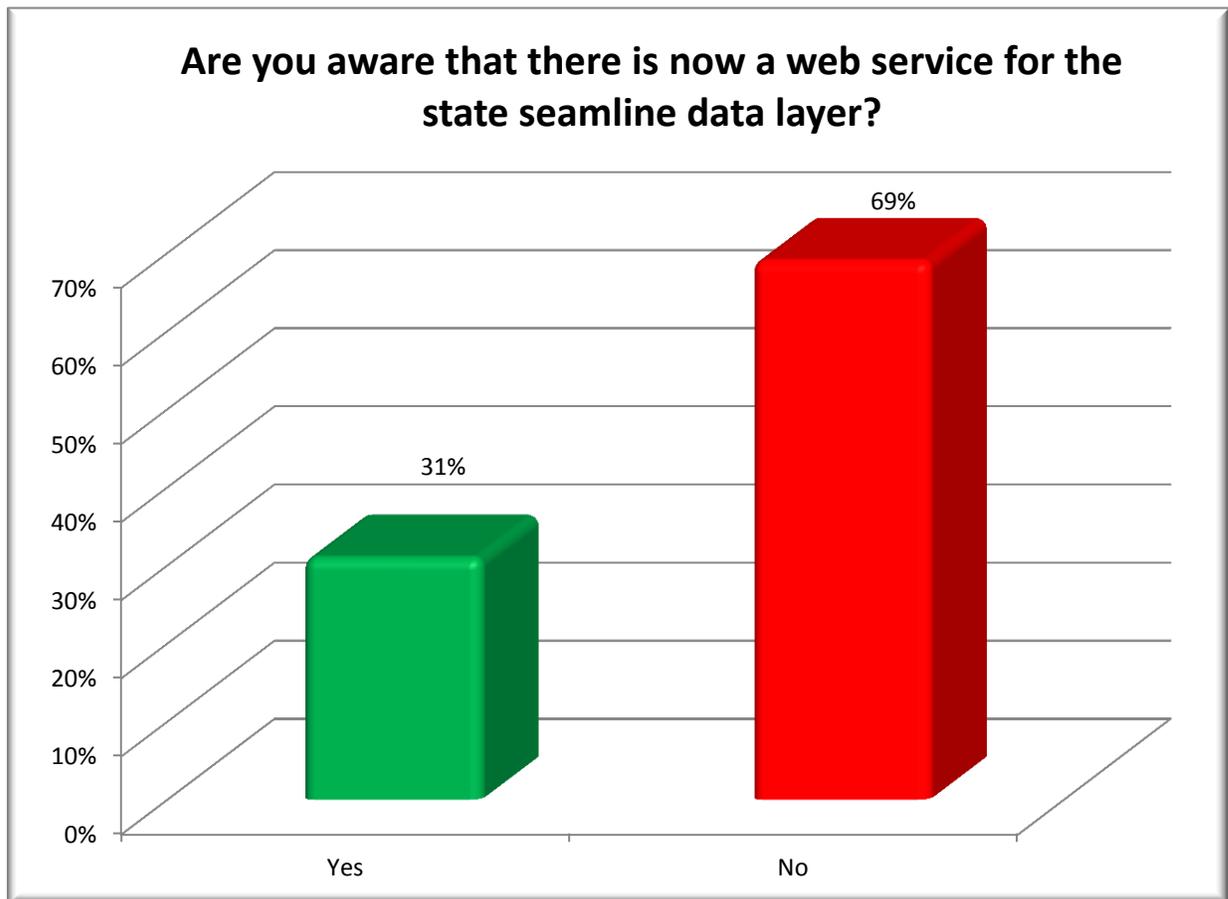
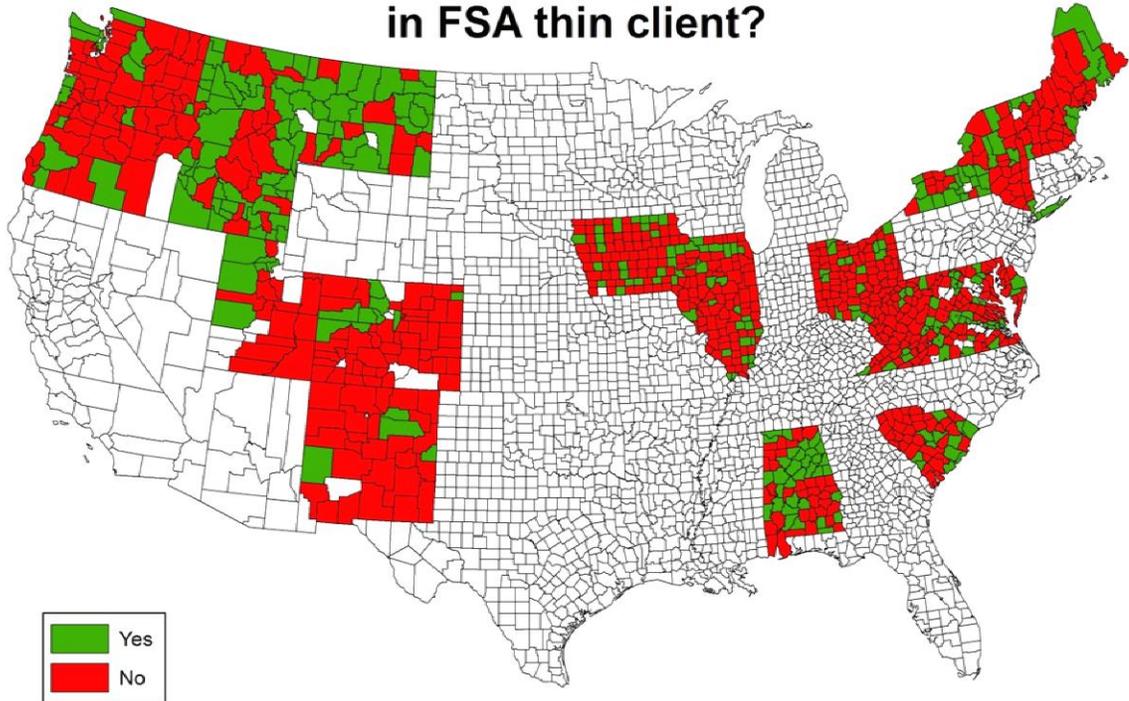


Chart 23 – Question 23

**Are you aware that there is now a web service for the state seamline data layer, that may be accessed in FSA thin client?**

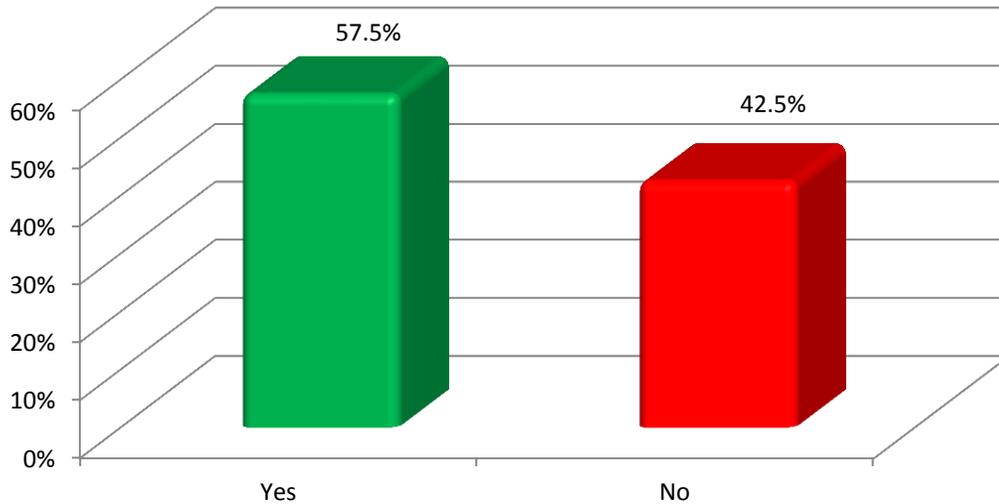


*Map 14 – Aware of seamline data layer*

**Question 24.** Are you aware that the 4-band NAIP imagery enables display of both Natural Color (NC) and Color-infrared (CIR) imagery when accessed in FSA thin client?

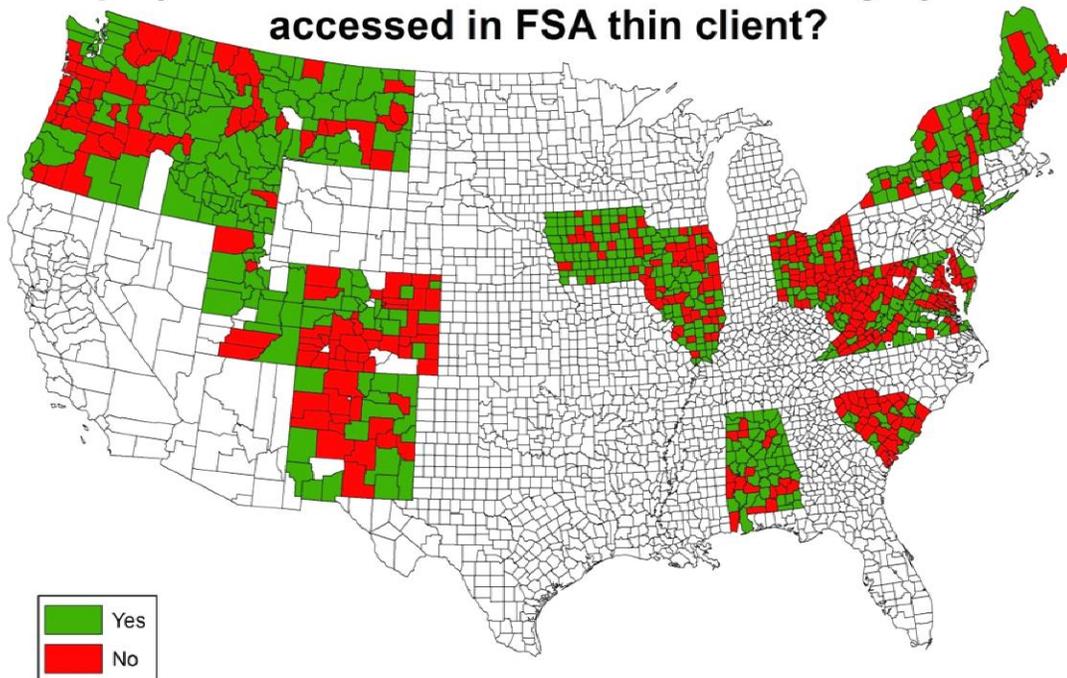
More than 40 percent of the respondents were not aware that both natural color and CIR imagery can be viewed using the 4-band NAIP imagery.

**Are you aware that the 4-band NAIP imagery enables display of both Natural Color and Color-infrared imagery when accessed in FSA thin client?**



*Chart 24 – Question 24*

**Are you aware that the 4-band NAIP imagery enables display of both Natural Color and CIR imagery when accessed in FSA thin client?**



*Map 15 – Aware that 4-Band NAIP enables viewing of Natural Color & CIR imagery*

**Question 25.** Was the 4-band imagery useful?

It appears that approximately 1/3 of the respondents feel that the 4-band imagery is useful where as about 2/3 are not sure or do not feel that it is applicable or useful.

Almost half of the people taking the survey skipped this question. For the other questions the percentage of people skipping the question was 10% or less where as the percentage for this question was nearly 50%. This could imply that an even larger percentage than the reported 46% were not sure if the 4-band imagery was useful or not. If they had an opinion (Y, N, N/A) they would have likely been more inclined or willing to answer the question instead of skipping it. While this is just speculation, if the number of respondents that skipped the question were combined with the number that answered “Not Sure” the percentage of respondents that were not sure about the usefulness of the 4-band imagery would be 72%. In other words, it is possible that nearly ¾ of the respondents were not sure if the 4-band imagery was useful.

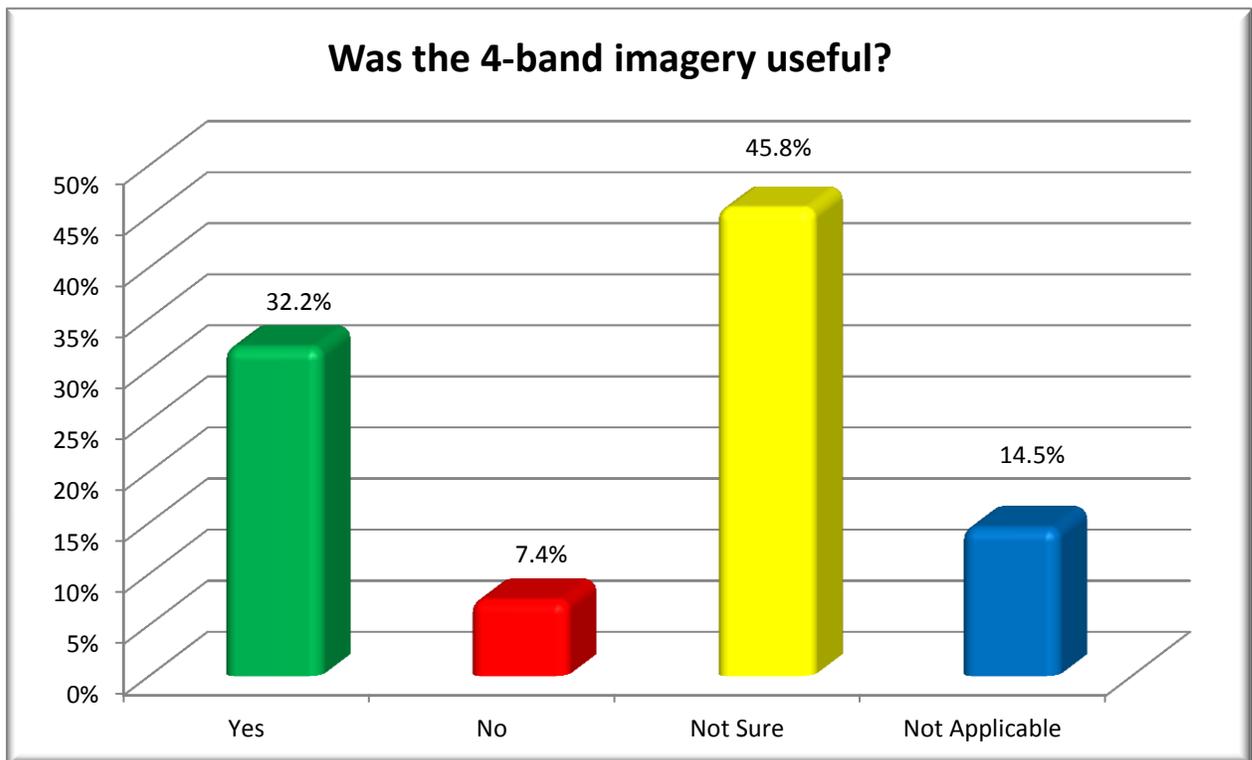
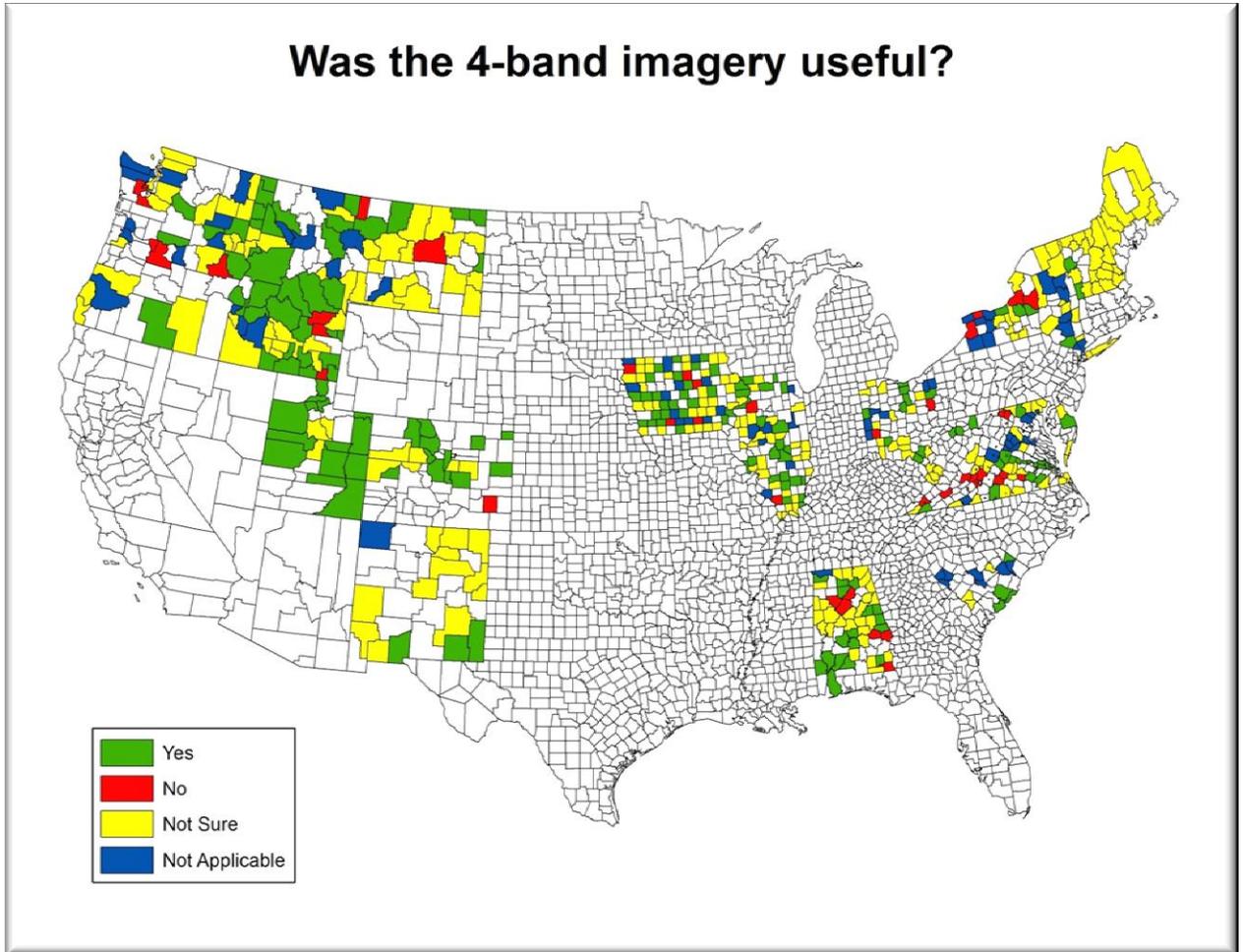


Chart 25 – Question 25

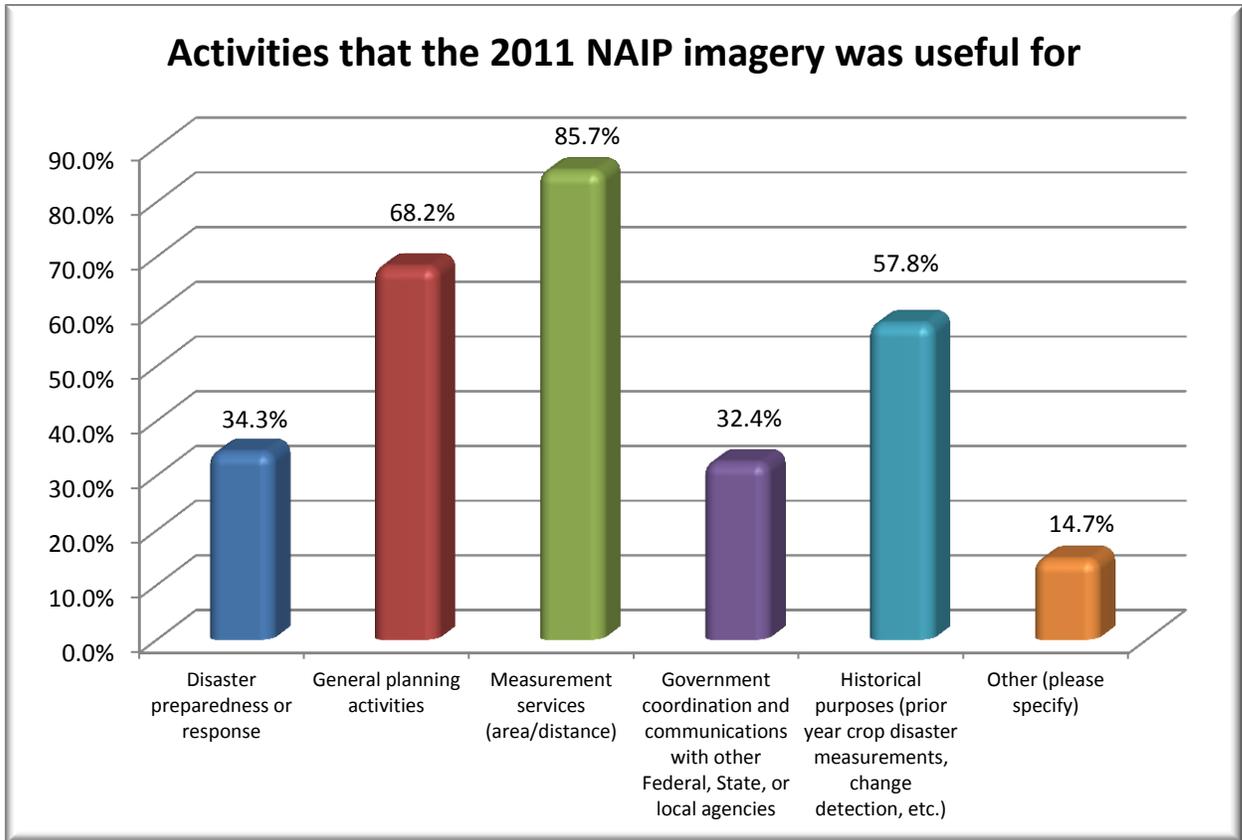
## Was the 4-band imagery useful?



Map 16 – Was the 4-band imagery useful?

**Question 26.** Mark the following activities that the 2011 NAIP imagery was useful for (select all that apply).

As in previous years, measurement services had the highest number of responses with slight variations with previous years for the other categories.



*Chart 26 – Question 26*

**Question 27.** Do you have any recommendations to improve the NAIP program?

This question allowed for open ended responses. Of the 1,098 FSA personnel that took the survey, there were 192 responses to this question. A summary of these responses can be found in Appendix B.

## Section 4 – Comparing Survey Results Over 6 Years

Other than the general questions (Name, Where do you work?, Position, etc.) at the beginning of the survey, there are 9 questions from the 2011 NAIP Survey that were essentially identical to questions asked in the 2006 - 2009 NAIP Surveys. With the use of image services by the FSA offices, question 14 was changed from asking when they received the imagery to when they were notified that the imagery was available on the image service. Several questions about the type of crops and acreages of these crops were eliminated from the 2012 survey. There had been little change from year to year in the previous surveys. The 2012 questions that remained consistent with previous years were:

Question 14: On what date were you notified that the 2011 NAIP imagery for your state was available on the image service?

Question 15: If 2011 NAIP imagery for your area could have been collected on a single day, what day would have been ideal?

Question 16: Given that a single date is not possible, what flying season do you feel would have been acceptable to meet your farm program needs?

Question 17: Did 2011 have typical growing seasons?

Question 18: Rate the image quality in terms of darkness/lightness:

Question 19: Rate the image quality in terms of contrast:

Question 20: Rate the image quality in terms of color:

Question 21: Overall, how satisfied are you with 2011 NAIP acquisition and delivery in your County/State?

Question 26: Mark the following activities that the 2011 NAIP imagery was useful for. (Select all that apply)

The responses to these 9 questions will be analyzed over time in the following charts and tables.

### **Question 14. Comparison: On what date did you first receive your 2011 NAIP imagery?**

This question was changed slightly for the 2011 survey to reflect the fact that the imagery is now made available through the thin client service rather than having to wait until the imagery arrives on DVD. This date has been fairly consistent over the past 6 years except for 2008 (see table 1).

On a related note, chart 32 shows the percentage of respondents that had not yet received a copy of the imagery or been notified that it was available on the thin client service.

Year	Most Frequently Entered Date
2006	10/1/2006
2007	11/1/2007
2008	1/26/2009
2009	10/1/2009
2010	10/1/2010
2011	10/24/2011

Table 1

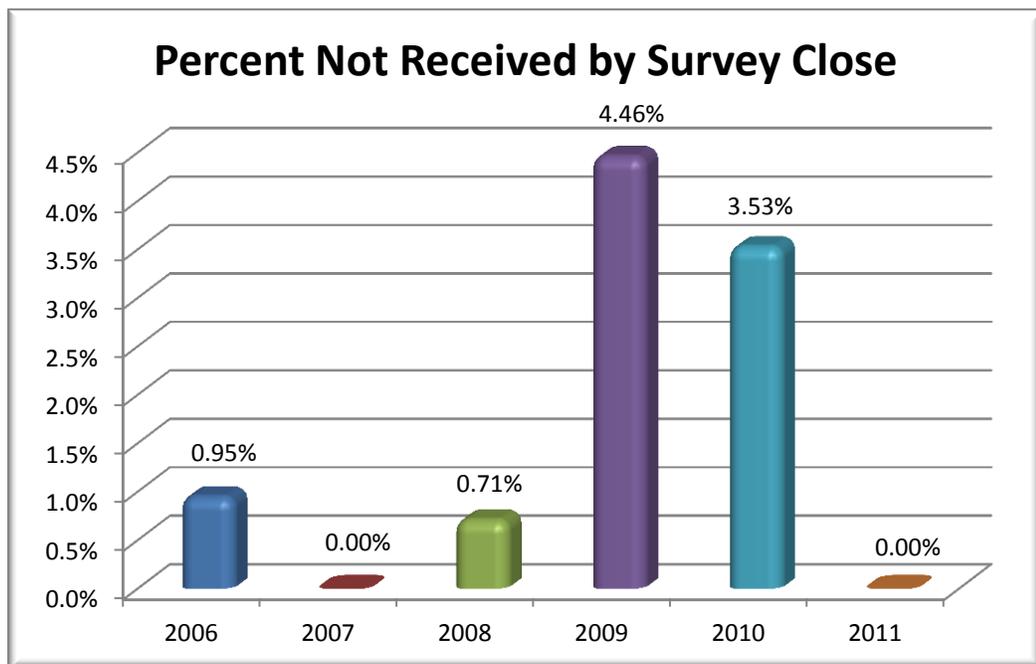


Chart 27-Question 14 Comparison

**Question 15. Comparison: If 2011 NAIP imagery for your area could have been collected on a single day, what day would have been ideal?**

All but one of the 6 past years said July 15<sup>th</sup> would be the ideal collection date (see table 2).

Year	Most Frequently Entered Date
2006	7/15/2006
2007	7/15/2007
2008	8/1/2008
2009	7/15/2009
2010	7/15/2010
2011	7/15/2011

Table 2

**Question 16. Comparison: Given that a single date is not possible, what flying season do you feel would have been acceptable to meet your farm program needs?**

The responses to this question have been pretty consistent over the past 5 years. Most respondents prefer the flying season to begin in July and end in August. This is a somewhat short time frame considering different growing seasons for crops and the considerable scale of the NAIP program. The following charts compare the responses.

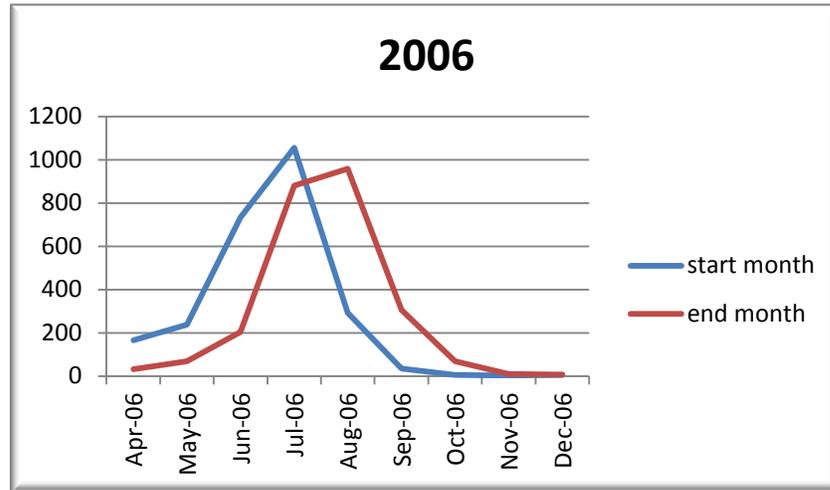


Chart 28 – Comparison of Question 16 Over 6 Years

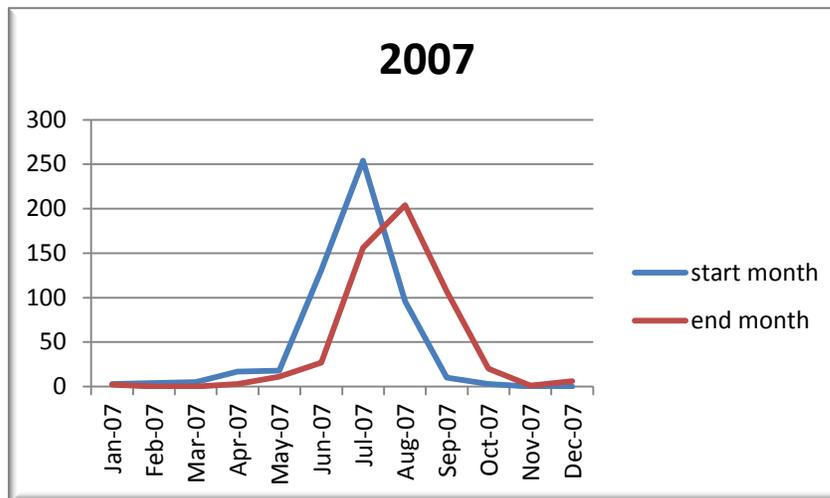


Chart 29 – Comparison of Question 16 Over 6 Years

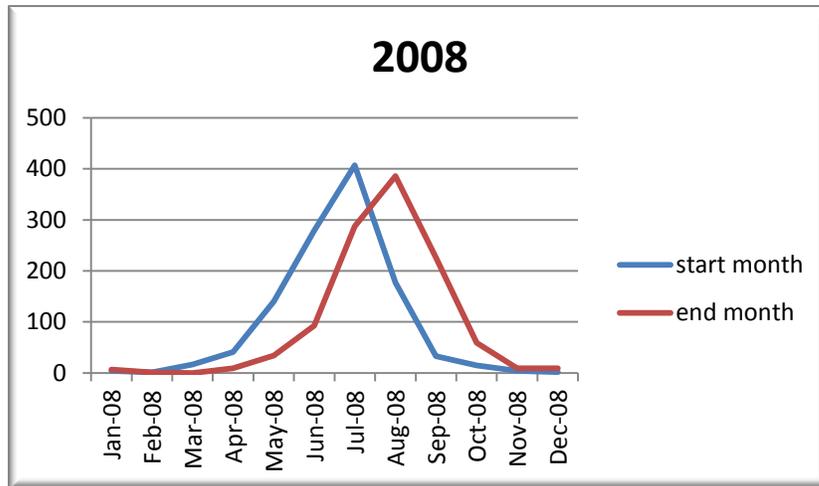


Chart 30 – Comparison of Question 16 Over 6 Years

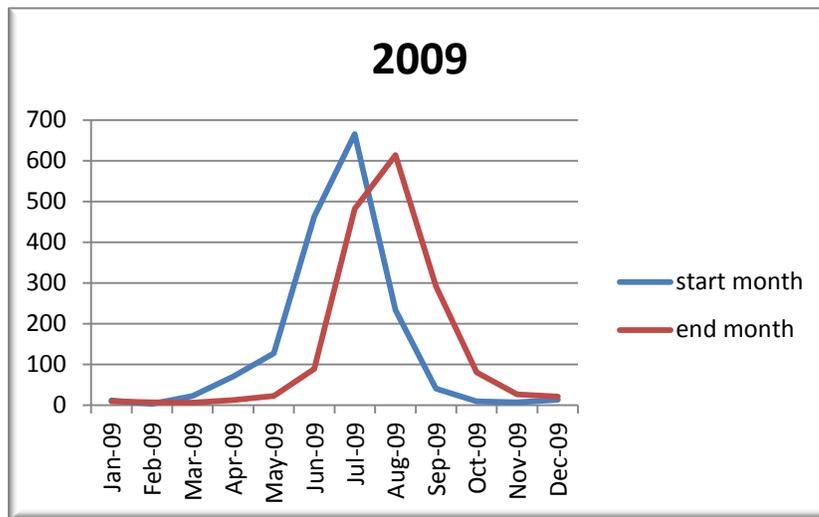


Chart 31 – Comparison of Question 16 Over 6 Years

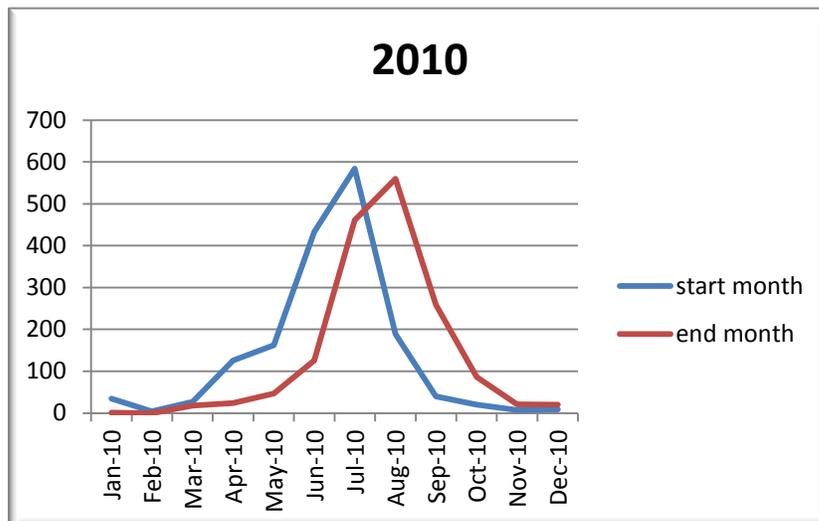


Chart 32 – Comparison of Question 16 Over 6 Years

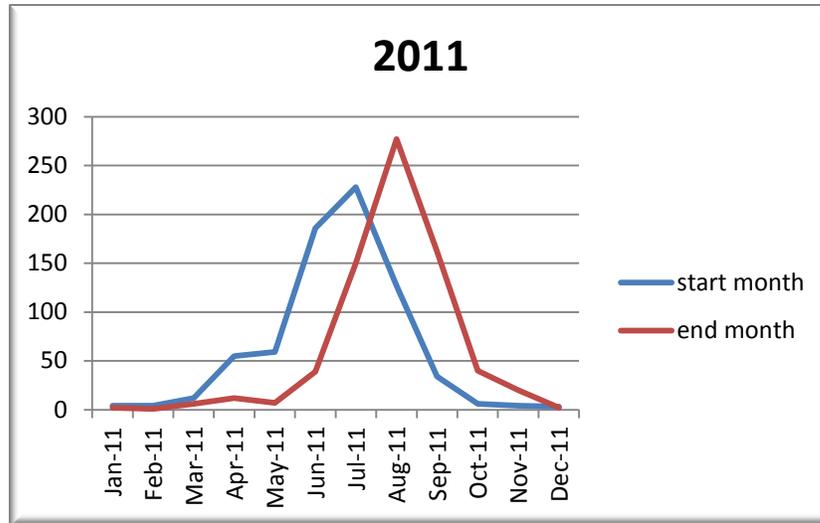


Chart 33 – Comparison of Question 16 Over 6 Year

**Question 17. Comparison: Did 2011 have typical growing seasons in your state?**

For 5 of the past 6 years, respondents reported that crops were harvested at about the normal time by large margins. In 2009, over 60% reported a late harvest. This could be attributed to weather and climate fluctuations or other variables. The trend appears to be that harvests will continue at normal times in the future.

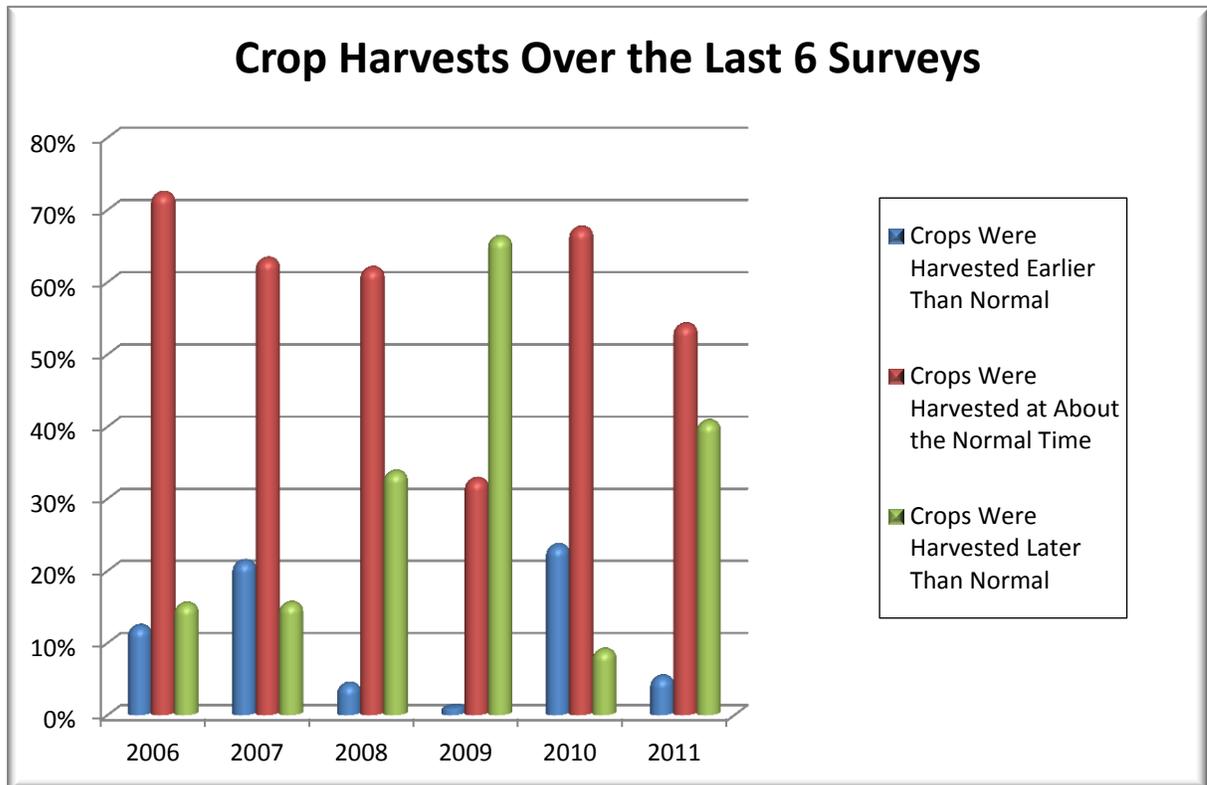


Chart 34 – Comparison of harvest times

**Question 18. Comparison: Rate the image quality in terms of darkness/lightness:**

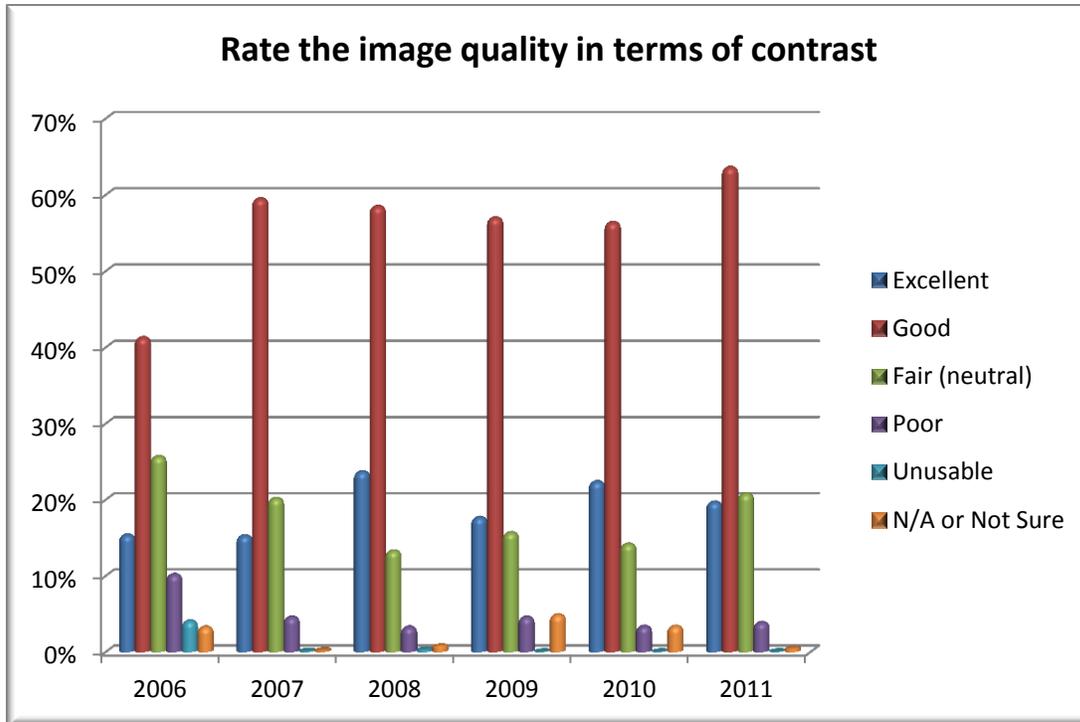
This question tracked over 6 years illustrates how respondents rated the image quality based on lightness and/or darkness. Subjectivity plays a part in this question (as well as the next two questions). From 2006 – 2011, “Good” was selected as the large majority. Only in 2006 was there a measurable percentage that selected “Unusable” (4.8%).



Chart 35 – Question 18 Comparison

**Question 19. Comparison: Rate the image quality in terms of contrast:**

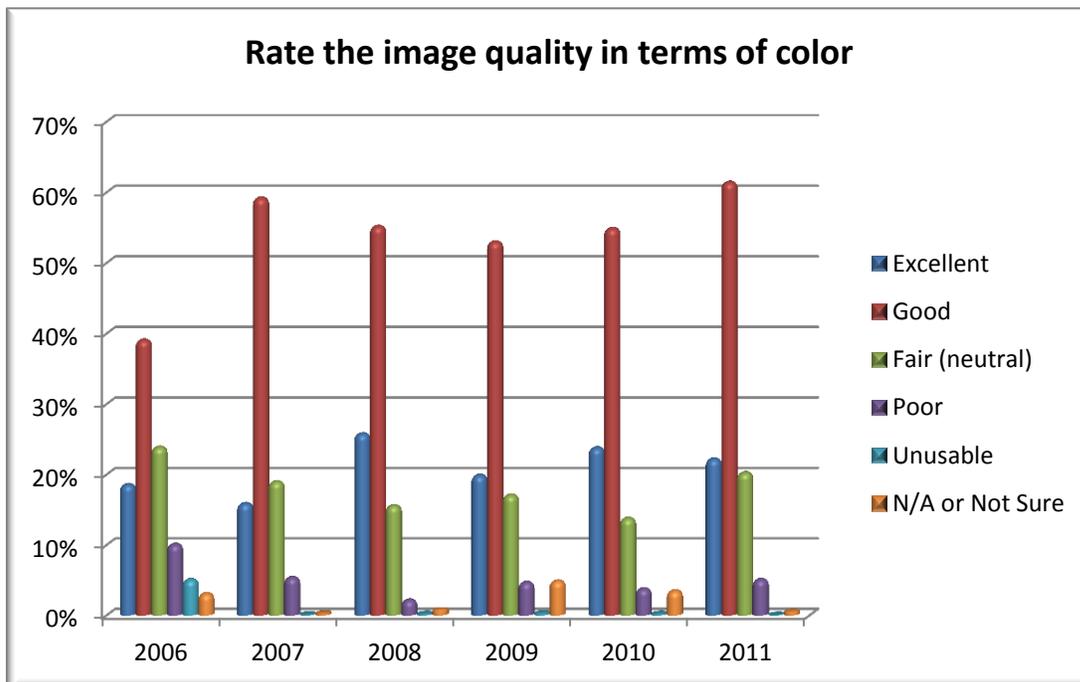
This question tracked over 6 years illustrates how respondents rated the image quality based on contrast. Again, the trends are similar to question 18.



*Chart 36 – Question 19 Comparison*

**Question 20. Comparison: Rate the image quality in terms of color:**

Question 20 was tracked over 6 years to see trends on how respondents rated the imagery based on color.



*Chart 37 – Question 20 Comparison*

Analyzing “Excellent” and “Good” ratings from the 3 previous questions, it appears that since 2007 the overall opinions of the imagery have remained high.

**Question 21. Comparison: Overall, how satisfied are you with 2011 NAIP acquisition and delivery in your County/State?**

The responses over the last 6 years somewhat mirror the previous questions. The lowest satisfaction level was in 2006 with continuing high levels from 2007 to the present.

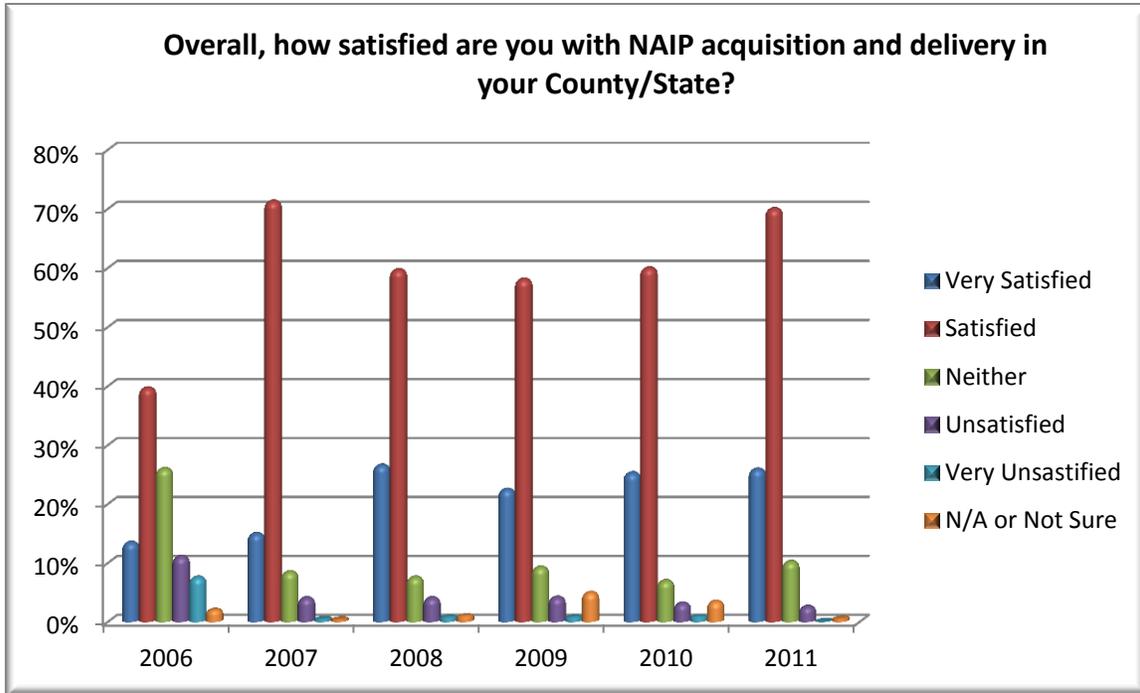


Chart 38 – Question 21 Comparison

**Question 26 Comparison: Mark the following activities that the 2011 NAIP imagery was useful for. (Select all that apply)**

The options for this question were the same over the last 6 years:

- Disaster preparedness or response
- General planning activities
- Measurement services (area/distance)
- Government coordination and communications with other Federal, State, or local agencies
- Historical purposes (prior year crop disaster measurements, change detection, etc.)
- Other (please specify)

The following chart illustrates the responses over the previous 6 years to question 26. Respondents identified “Measurement services (area/distance)” the most over the past 6 years with “Historical purposes...” second. It would appear that NAIP imagery is repeatedly important as a base for calculating field acreage as well as being historically valuable.

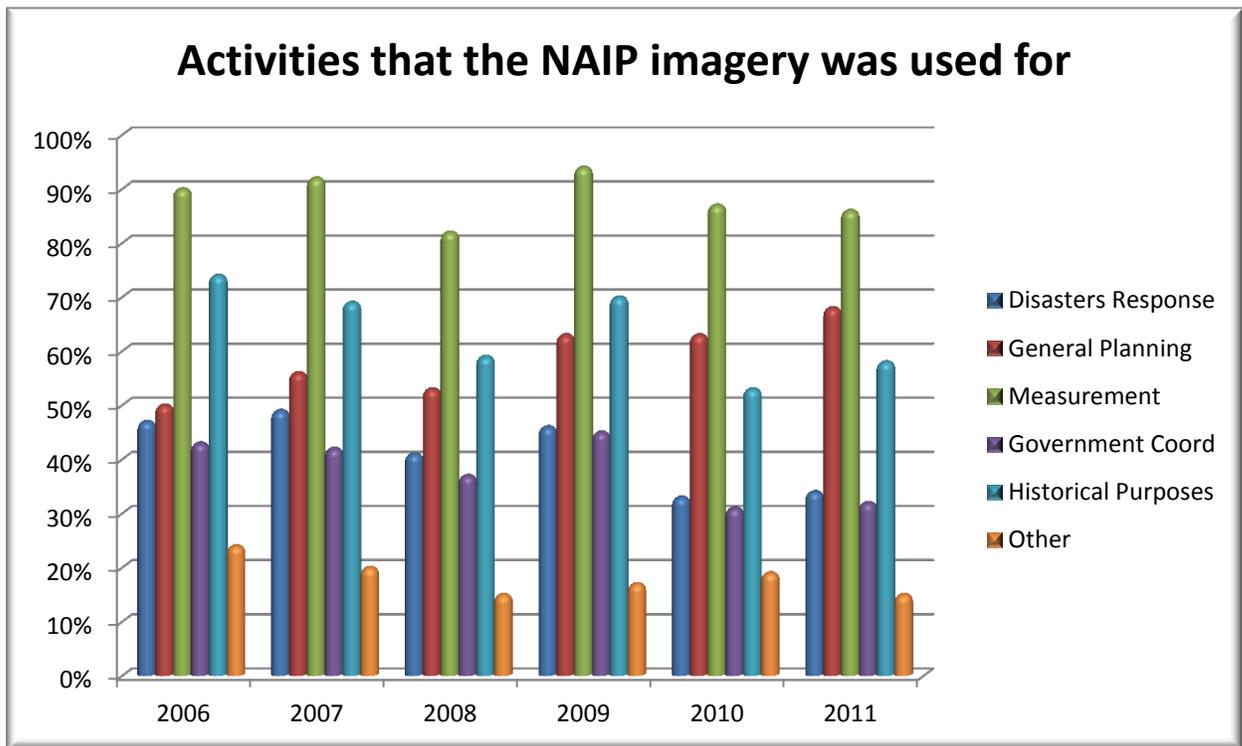


Chart 39 – Question 26 Comparison

## Section 5 – Recommendations for NAIP Based on Survey Results

The purpose of the NAIP survey is to help assess and improve the program from year to year. Many conclusions may be drawn from the results of the 2011 NAIP Survey. As discussed in the previous year's survey results, improvements to NAIP could be calculated in a purely statistical manner, where customer satisfaction is assessed each year, with a goal of 100% satisfaction. However, due to factors out of our control, such as weather, early and late crop harvest dates, fires, crop types, processing and equipment issues, the technology curve, and so forth, 100% satisfaction is by no means a realistic goal for NAIP. A more realistic measurement of success is in looking at the trends from year to year.

Program improvement should be based on an increase in satisfaction of the primary customer (FSA State and County Offices). NAIP is one method by which FSA program activities may take place, and is currently accepted as a means to update a State's official FSA orthoimagery base for GIS. Overall, 2011 should be considered a good year for NAIP. Overall satisfaction in 2011 was up from 2010. Overall satisfaction is based on the combined percentage of respondents indicating that they were either very satisfied or satisfied with overall acquisition and delivery of NAIP imagery. In 2010, overall satisfaction was 81% compared to 85% for 2011.

Specifically, suggestions to improve NAIP based on survey results include:

1. Based on comments from respondents, the top "complaint" was delivery time. There were many concerns about when the county offices first receive the imagery. With the migration to the thin client environment completed, continual improvements such as imagery delivery and refresh rate can be addressed.
2. Question 27 asked if respondents were aware of the data included with the seamline shapefile. About 77% said they were not aware of the data. This is similar to 2010 as well; 73% reported the same thing. More instruction should be provided to the county and state offices regarding the seamline shapefiles and associated data.
3. Question 29 asked if respondents knew that 4-band (RGB plus Near-infrared) imagery was available. About 66% answered no to this question. It is important that state and county offices are made aware of near infrared imagery as it is available through the FSA web services. As was the case last year this is a subject that needs to be emphasized to the state and county offices.
4. Continue to improve the color/contrast/light/dark specifications. Because of the subjectivity here, a perfect specification is difficult to attain.
5. Encourage state office personnel to work with county office personnel to determine ideal acquisition seasons for NAIP. Based upon responses, many county office personnel would like their flying seasons altered.

## **Section 6 – Recommendations for Changes to Survey for 2012**

Most likely, the NAIP survey will continue into the future and will be administered by APFO. A 2012 NAIP Survey will be issued some time near the beginning of 2013, with an approved notice from FSA. Using the same survey medium will continue to allow for comparative analysis of multi-year survey data, as the method and many of the questions would remain consistent.

Several minor changes to the survey, based on errors or oversights discovered in the 2011 NAIP Survey, are outlined below:

1. Option of entering more than one county FIPS code could be investigated. Many service centers are responsible for more than one county, some as many as five counties. Rather than making them take the survey five times, perhaps the survey could offer the option of selecting more than one FIPS and only taking the survey once. Any change of course can have implications. For example, it is not clear as to whether the current survey service can accommodate such an option. It also would make it possible for people to not only select the wrong FIPS code similar to what happens now but select multiple wrong FIPS codes.
2. Only allow each FIPS code to be used once. Currently the same FIPS code has been used multiple times for quite a few counties.

## Appendix A – Alternative Uses of NAIP

Question 26 of the 2011 NAIP Survey asked the respondents to list the activities for which FSA County and State Offices use NAIP. This question was a ‘select all that apply’ type of question, and was accompanied by the additional option for an open ended response.

Of the ‘select all that apply’ categories, the following is a list of the standard responses with percentages of the total number of customers responding. Most of the responses were within a percentage point compared to the 2010 survey. Usage for general planning and historical purposes rose 5 percentage points this year. (2010 percentage in parentheses)

- 86% of respondents find NAIP useful for measurement services (87%)
- 68% of respondents find NAIP useful for general planning activities (63%)
- 58% of respondents find NAIP useful for historical purposes (53%)
- 34% of respondents find NAIP useful for disaster preparation (33%)
- 32% of respondents find NAIP useful for government coordination (31%)

15% chose “Other” as an option. Here, respondents could manually identify other NAIP usage. In general, alternative uses included but were not limited to:

- Updating maps for producers
- Did not receive in time for 2011 usage but will be useful in 2012
- Land sales
- Crop certification
- CRP spot checks
- Farm change due to operators request
- Identifying crop circles
- Industrial wind farm projects, croplands removed from production due to wind turbines
- Crop reporting and CRP activities
- Irrigation patterns
- Acreage reports
- Grain bin locating
- Non agriculture determinations and purposes
- Certification information for forestry consultants, timber industry
- Land use changes
- Information for farmers to calculate sprays purchases, direct workers, areas for replanting
- Wetland areas, HELC/WC provisions
- Sod busting, sod swamps
- CRP haying
- FSFL loans
- CREP, acreage determinations
- Farm program implementations
- Determination of inundated crops by Missouri River flood waters
- Checking for trees and encroachment on CRP expiring in 2012
- Cropland changes that producers don’t tell us about ex. Houses, ponds, barns

## **Appendix B – Recommendations to Improve NAIP**

Question 27 of the 2011 NAIP Survey asked what recommendations customers may have to improve the NAIP program? Responding to this question was optional. There were 192 total responses of 1,098 that took the survey. Open ended responses varied greatly, but general trends noted the following:

- Clearer, higher resolution, more detail
- Deliver the imagery in a more timely manner
- Methods so that clouds can be easily identified, cloud cover issues
- Annual or at least biennial (every two years) acquisition
- Overcome infrastructure, hardware, and software issues (many thin client comments)
- Increase training
- Access to prior year imagery
- Access to historical imagery (50-60 year)
- Multiple comments that NAIP is fine and are happy with program
- Notification when imagery will be delivered later than scheduled

## Appendix C – Summaries of Open-Ended Questions

Question 2 asked for the respondent's position. The following is a summary of those positions.

- Acting County Executive Director
- Acting County District Director
- Administrative Program Technician
- County Operations Trainee
- County Program Technician
- Key Program Technician in charge of GIS
- Program Technician in charge
- Lead Program Technician

11. Approximately how many times did you use the 2011 NAIP imagery when generating maps?

- Most responses were in the zero to several thousand range
- A few entries in the 10,000 to 30,000 range
- 356,144
- 500,000
- 1,000,000
- 999,999,999

13. How many times was the 2011 NAIP imagery used in appeal adjudications?

- 1-10 (most entries)
- 20
- 40
- 90
- 100

16. Flying season start and end dates:

- Average start date 9/25/2011 & average end date 11/19/2011
- Most frequently entered start and end dates: July 1, 2011 and August 15, 2011
- Range: July 1, 2010 through August 31, 2014

## Appendix D – Questions Omitted or changed in the 2011 Survey

The following questions from the 2010 NAIP survey were omitted or changed for 2011. There were various reasons for removing or changing questions. The changes can be seen in the before and after questions (with italics) or the reason is provided for each question.

A.

2010: With regards to using NAIP imagery for the following programs, how satisfied were you with the delivery time of the 2010 NAIP imagery? (check all that apply).

2011: With regards to using NAIP imagery for the following programs, how satisfied *are* you with the *date you were first notified that the 2011 NAIP imagery was available?* (check all that apply).

The question was modified to reflect the change from delivery of imagery on CD or DVD to the current system which uses thin client services for viewing of the NAIP imagery.

B.

2010: On what date did you first receive your 2010 NAIP imagery?

2011: On what date *were* you first *notified that the 2011 NAIP imagery for your state was available in the image service?*

The imagery is viewed through the image service rather than from CD or DVD.

C.

2010: Did 2010 have typical growing seasons?

2011: Did 2011 have typical growing seasons *in your state?*

Avoid confusion regarding state vs. national conditions.

D.

Questions numbered 23 – 26 in the 2010 survey were removed. These questions asked about the primary and secondary crops for each state in total acreage and dollar amounts.

The questions were removed since little change was observed from year to year and because the information can generally be found from other sources.

E.

2010: A Seamline Shapefile is delivered with each Compressed County Mosaic. Are you aware that this shapefile contains acquisition time and date information for each camera exposure used to create the Compressed County Mosaic?

2011: *Are you aware that there is now a web service for the state seamline data layer, which includes image acquisition data and other related information, that may be accessed in FSA thin client?*

Change made to reflect the fact that the seamline data can now be accessed through the thin client service.

F.

Is the Seamline shapefile index more useful than the previously provided county digital ortho quarter quad index?

This question, number 28 in the 2010 survey, was removed since it is no longer relevant.

G.

2010: Did you know that 4-band (RGB plus Near-infrared) imagery was available?

2011: *Are you aware that the 4-band NAIP imagery enables display of both Natural Color (NC) and Color-infrared (CIR) imagery when accessed in FSA thin client?*

Question changed to reflect the ability to view both RGB and CIR imagery with the thin client service whenever 4-band imagery is acquired for NAIP.